SERVICE MANUAL

CASSETTE CAR STEREO
WITH AM/FM/MPX RADIO
(12 VOLT D.C. NEGATIVE EARTH)

MODEL CM-822T
CM-832T

ALPINE ELECTRONICS INC.

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1. SPECIFICATIONS — CM-822T/CM-832T

1. AM RADIO

Frequency Range	525 ~ 1620kHz
Intermediate Frequency	455kHz
Sensitivity for S/N 20dB	22dB/12.6μV
S/N Ratio (74dB/5mV Input)	45dB
Image Rejection	55dB (at 1400kHz)

2. FM RADIO

Frequency Range	87MHz ~ 105MHz
Intermediate Frequency	10.7MHz
Sensitivity for S/N 30dB	14dB/5μV
S/N Ratio (40dB/100μV Input)	60dB
Image Rejection	45dB at 104MHz
Stereo Separation	20dB

3. TAPE PLAYER

Tape Speed	4.75 cm/sec (C-60)
S/N Ratio	50dB
Channel Separation	35dB
Frequency Response	6.3kHz: −3dB
	125kHz: +1dB
FF/REW Time	100 sec
Wow and Flutter	0.25%
Crosstalk	43dB 1kHz

4. General

Power Supply	DC 14V (11 ~ 16V allowable)
Output Power	4.5W Max.
Semiconductors	7 ICs, 1 Zener, 22 Diodes
Dimensions	175(W) x 135(D) x 40(H) mm
Weight	1.5kg

2. PARTS LOCATION — CM-822T/CM-832T

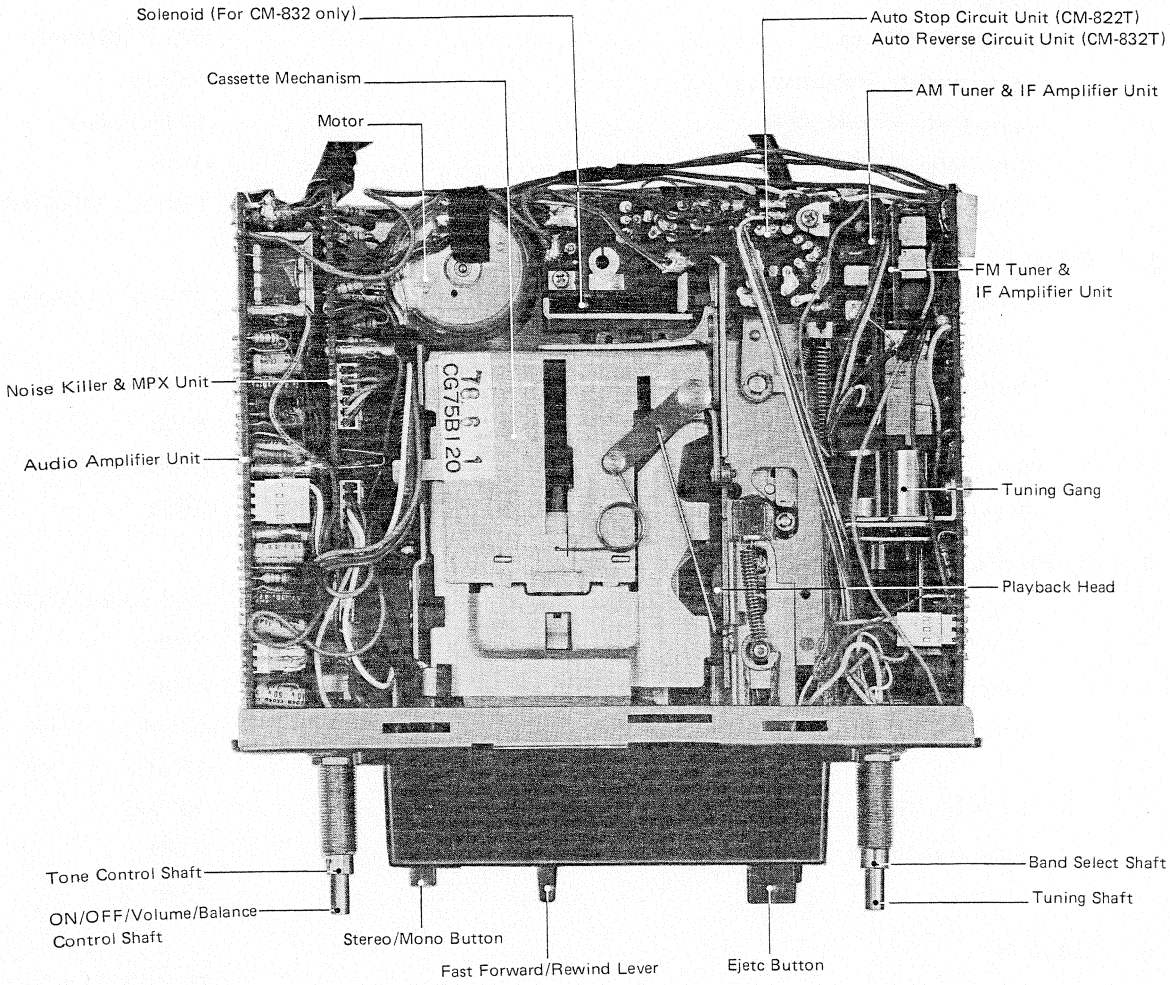


Figure 1

3. DIAL CORD STRINGING — CM-822T/CM-832T

1) Set the tuning capacitor to the maximum capacitance (fully counterclockwise position).

2) Wind the dial cord in the numerical sequence as shown in direction of the arrows.

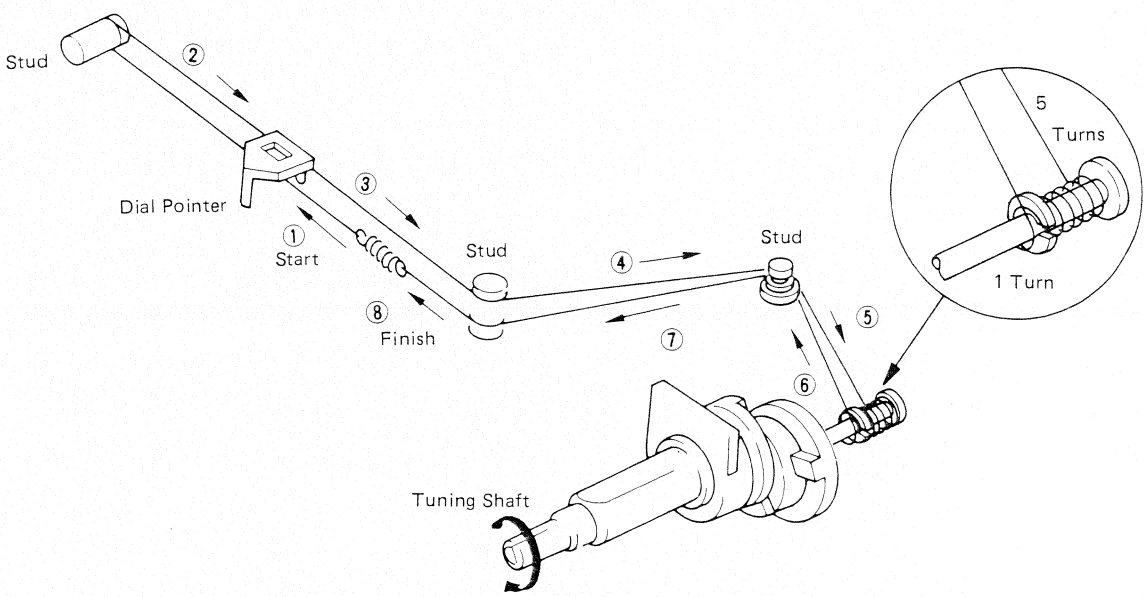


Figure 2

4. ADJUSTMENT

4-1 MW TUNER

- **Instrument Connection**

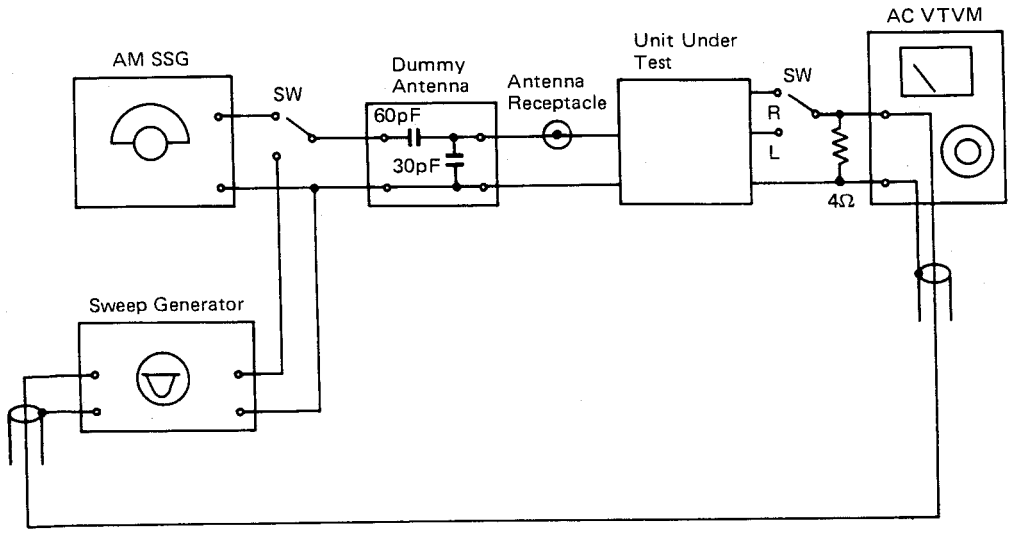
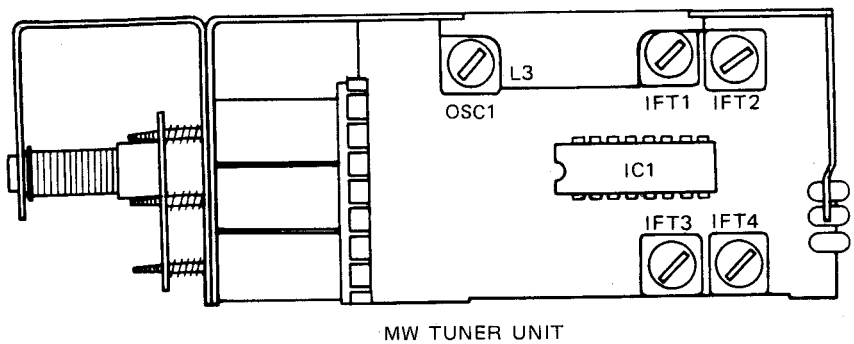


Figure 3

- **Layout of Adjustable Parts**



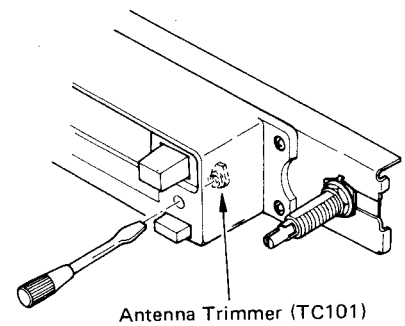


Figure 4

- **Procedure**

Step	Adjustment	Input Signal	Dial Setting	Adjustment Parts	Hint
1	IF	455 kHz, 60 dB	600 kHz	IFT1 ~ 4	Adjust for "V" curve and max. amplitude.
2	Calibration; 1400 Hz	1400 Hz, 25 ~ 30 dB	1400 Hz	OSC1	For max. reception
3	Antenna Trimmer	1400 kHz, 10 ~ 20 dB	1400 kHz	TC101	For max. reception

- **Instrument Connection**

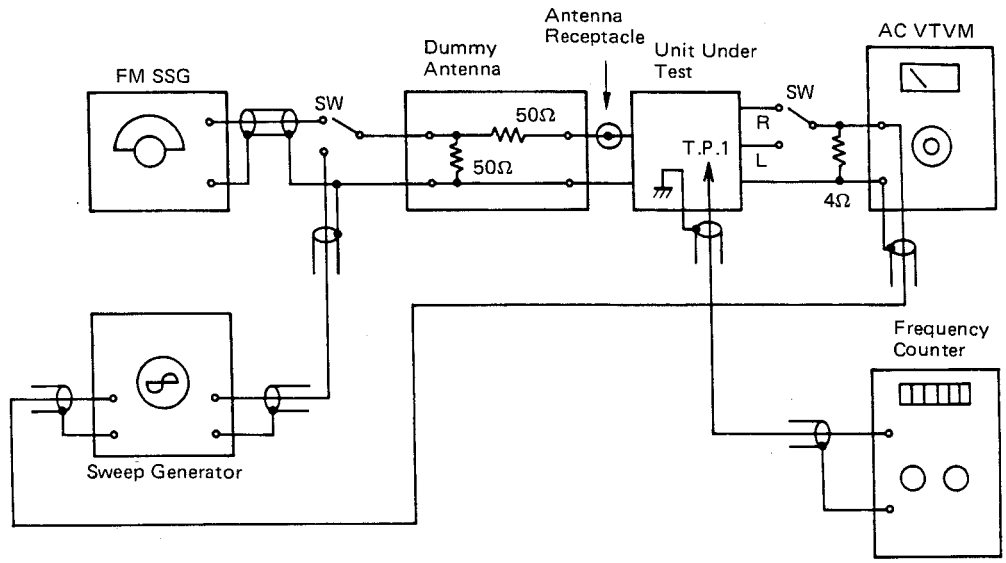
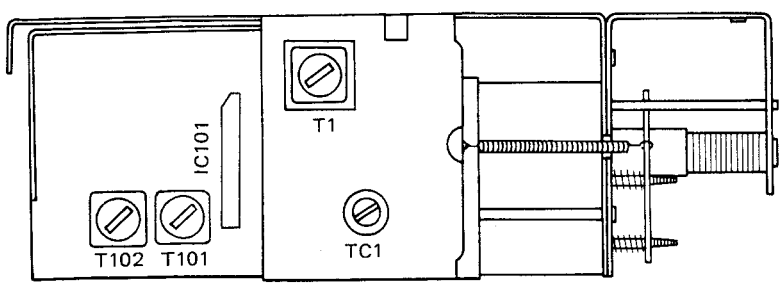


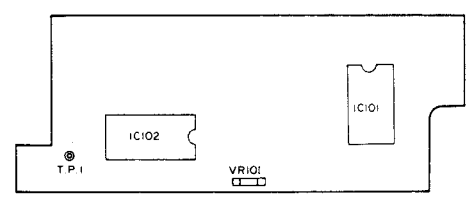
Figure 5

- **Layout of Adjustable Parts**



FM TUNER UNIT

Figure 6



NOISE KILLER & MPX UNIT

Figure 7

- **Procedure**

Step	Adjustment	Input Signal	Dial Setting	Adjustment Parts	Hint
1	IF	10.7 MHz, 40 m 70 dB from Sweep Generator	Possible at any point	T101 T102	Adjust for optimum "S" curve.
2	FM Calibration	108 MHz, 15 m 20 dB	108 MHz	TC1	For max. reception
3	MPX Circuit	No Signal		VR101	For 19 kHz

- **Instrument Connection**

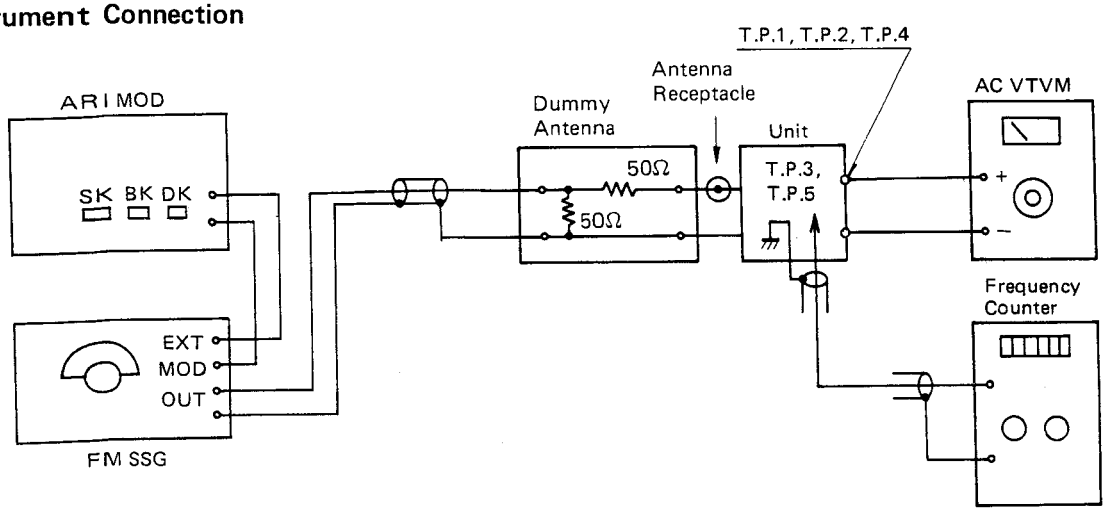


Figure 8

- **Layout of Adjustable Parts**

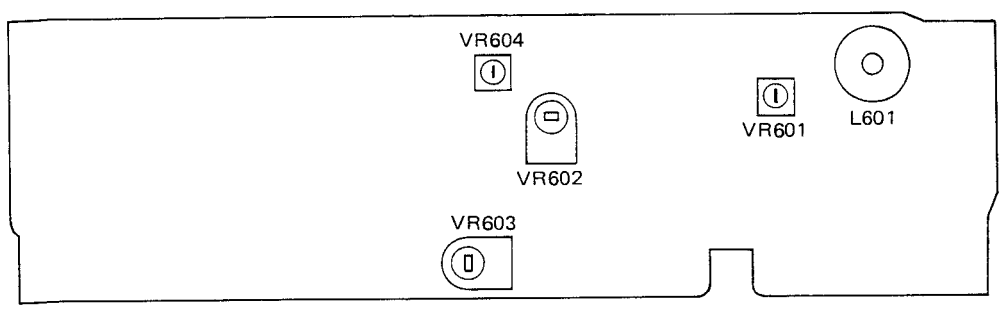


Figure 9

- **Test Condition**

1. Test Signal Frequency : 87MHz
2. Deviation : 22.5kHz
3. Output Level : 40dB

- **Procedure**

Step	Adjustment	AIR Moderator Mode	Adjust Parts	Test Points	Hint
1	SDK Signal Tuning	SK : ON BK : ON DK : OFF	L601	T.P.1	Adjust for max.
2	SK Signal Input Level	SK : ON BK : ON DK : OFF	VR601	T.P.2	Adjust for 70 ~ 80mV.
3	SK Signal MPX	SK : OFF BK : OFF DK : OFF	VR602	T.P.3	Adjust for 57kHz.
4	DK Signal Input Level	SK : ON BK : ON DK : ON	VR603	T.P.4	Adjust for 150mV over.
5	DK Signal MPX	SK : ON BK : ON DK : OFF	VR604	T.P.5	Adjust for 125Hz.

- **Instrument Connection**

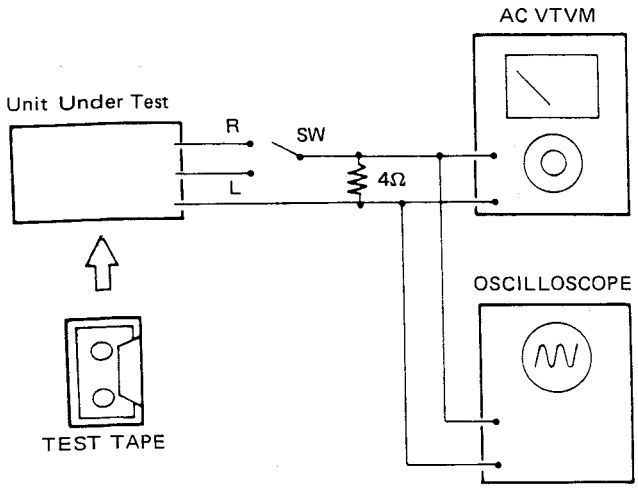


Figure 10

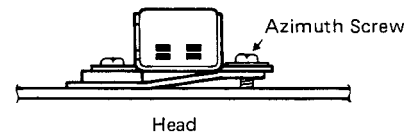


Figure 11

- **Procedure**

Step	Measurement	Test Tape	Remarks
1	Azimuth	MTT-113 6.3 kHz Signal tape	Adjust the screw for maximum reading on V.T.V.M.s. Output maximum.
2	Wow and Flutter	MTT-111 3 kHz Signal tape	L-ch or R-ch Wow and Flutter read on Wow and Flutter Meter. Less than 0.35%
3	Tape Speed		L-ch or R-ch Tape Speed read on Frequency counter. Within −2% ~ +4%
4	Crosstalk (Separation)	MTT-121 L-Rch 1 kHz Signal tape	L-ch and R-ch output maximum read on V.T.V.M. Turn the Test tape on blank. L-ch and R-ch output minimum read on V.T.V.M. Difference of L and R is more than 35 dB. Output 500 mW
5	Crosstalk (Track)	MTT-141 L-ch 1 kHz Signal tape	L-ch output maximum read on V.T.V.M. R-ch output minimum read on V.T.V.M. Difference of L and R is more than 30 dB. Output 500 mV
6	Frequency characteristic	MTT-116U 125 Hz, 1 kHz, 6.3 kHz Signal tape	L-Ch and R-Ch Output read on V.T.V.M. 333 Hz; Standard 6.3 kHz; Treble −3 dB, Bass −12 dB, Tolerance +6 dB 125 Hz; Treble +1 dB, Bass +1 dB, Tolerance +4 dB

5. BLOCK DIAGRAM

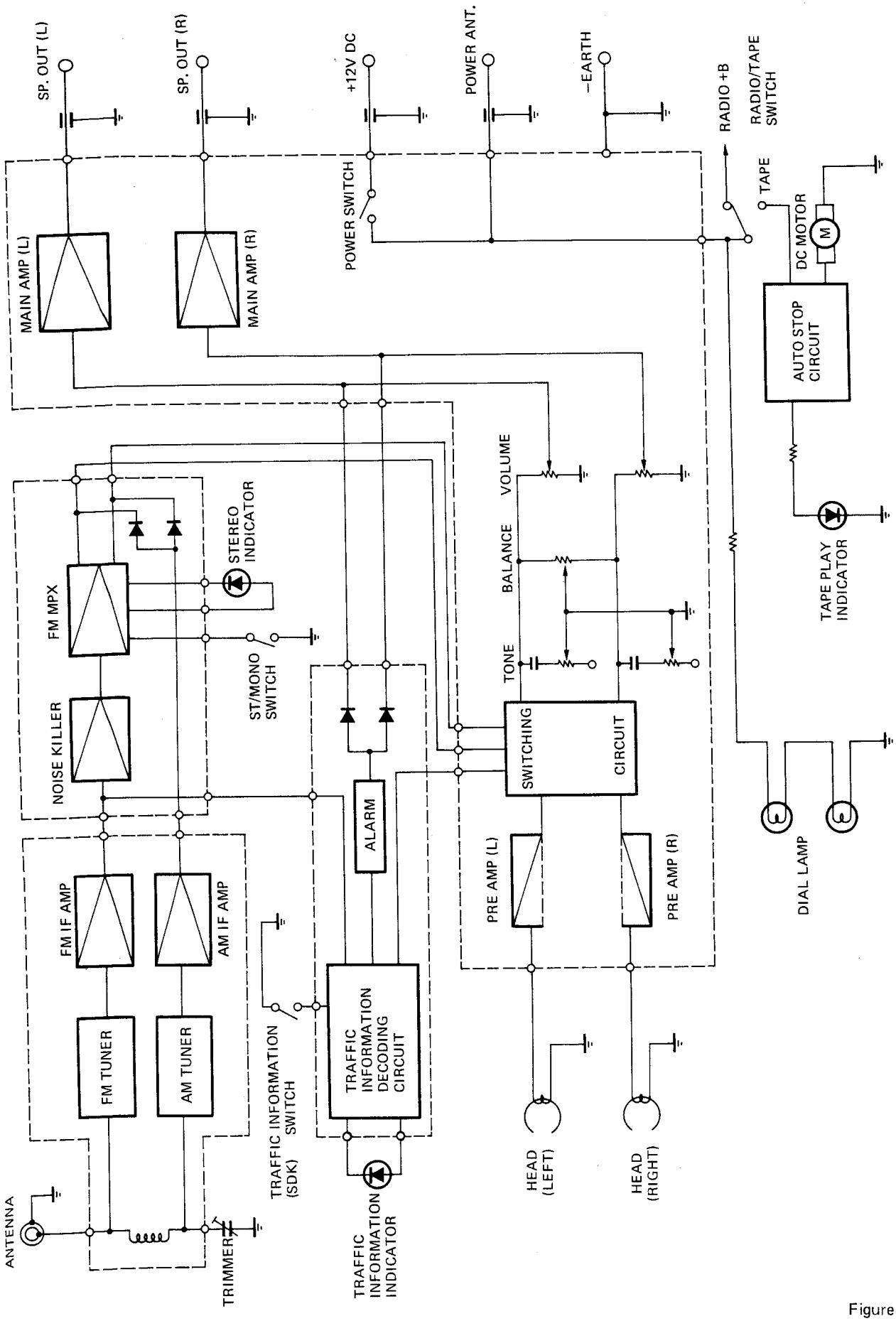


Figure 12

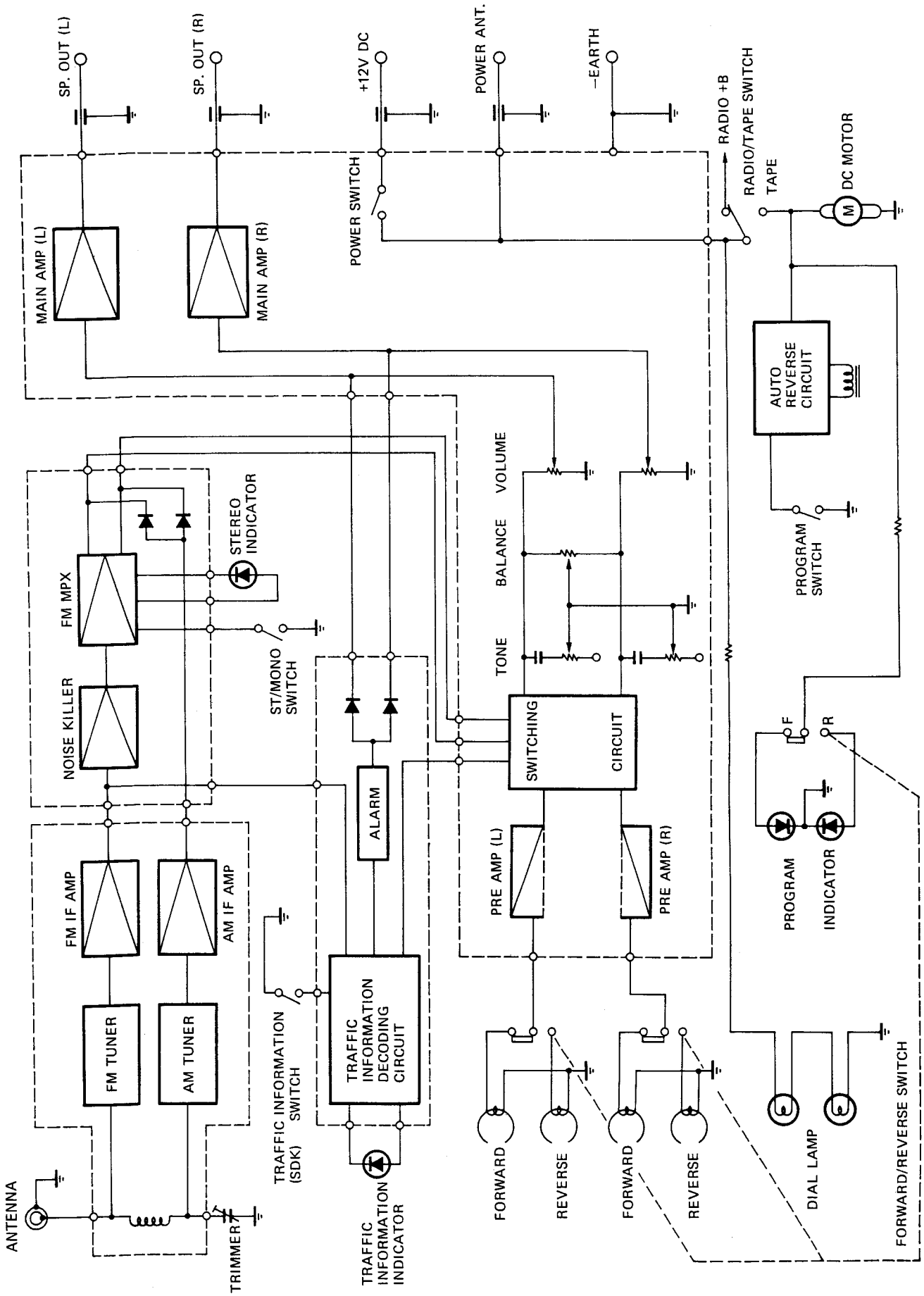

SP. OUT (L)
SP. OUT (R)
+12V DC
POWER ANT.
–EARTH
RADIO +B
RADIO/TAPE SWITCH
TAPE
DC MOTOR
MAIN AMP (L)
MAIN AMP (R)
POWER SWITCH
AUTO REVERSE CIRCUIT
PROGRAM SWITCH
STEREO INDICATOR
FM MPX
NOISE KILLER
ST/MONO SWITCH
VOLUME
BALANCE
TONE
SWITCHING CIRCUIT
F
R
PROGRAM INDICATOR
ALARM
PRE AMP (L)
PRE AMP (R)
FM IF AMP
AM IF AMP
FM TUNER
AM TUNER
TRAFFIC INFORMATION (SDK) SWITCH
TRAFFIC INFORMATION DECODING CIRCUIT
FORWARD
REVERSE
FORWARD
REVERSE
DIAL LAMP
FORWARD/REVERSE SWITCH
ANTENNA
TRIMMER
TRAFFIC INFORMATION INDICATOR

Figure 13

6. SCHEMATIC DIAGRAM — CM-822T

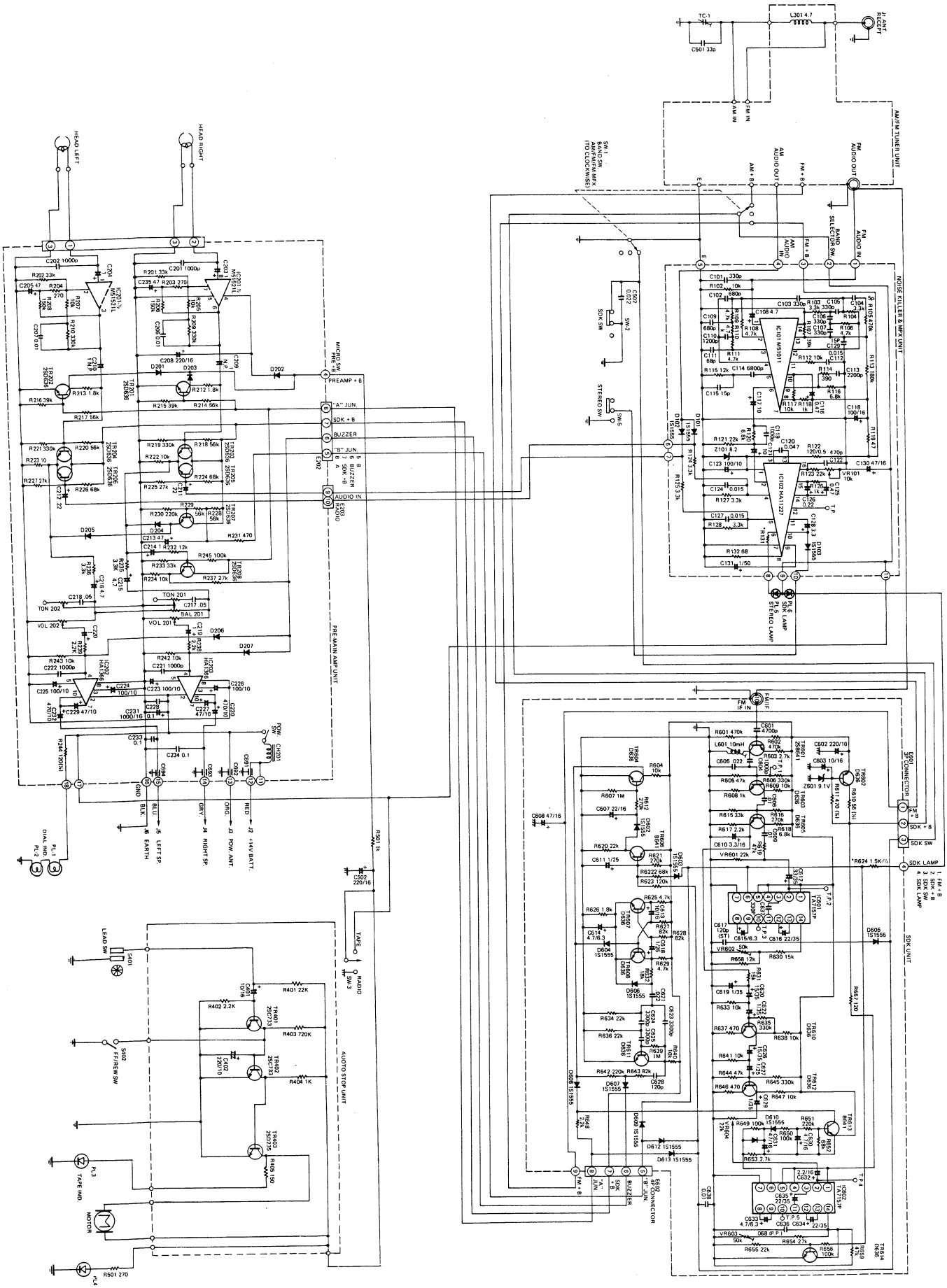


Figure 14

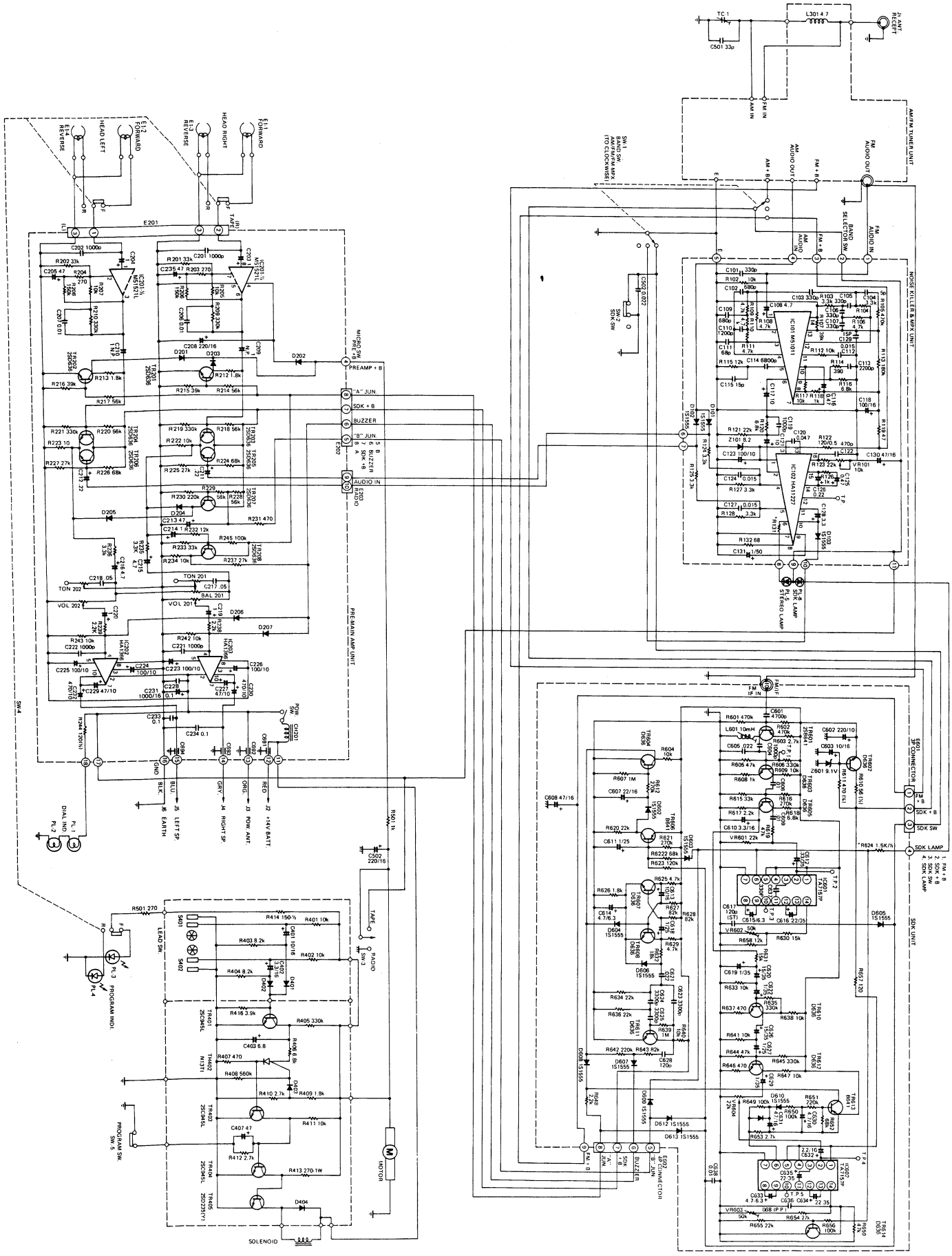


Figure 15

7. WIRING DIAGRAM

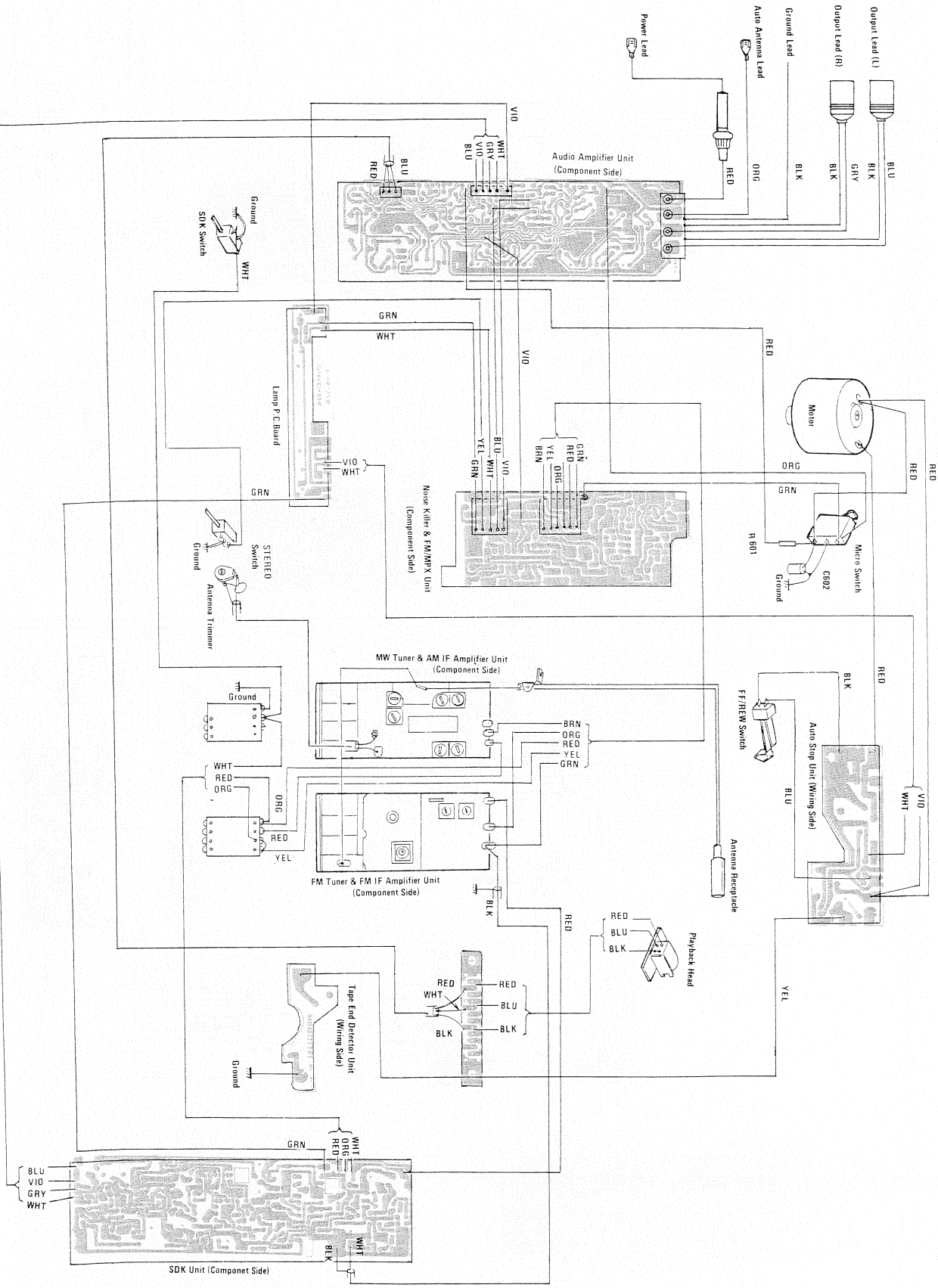


Figure 16

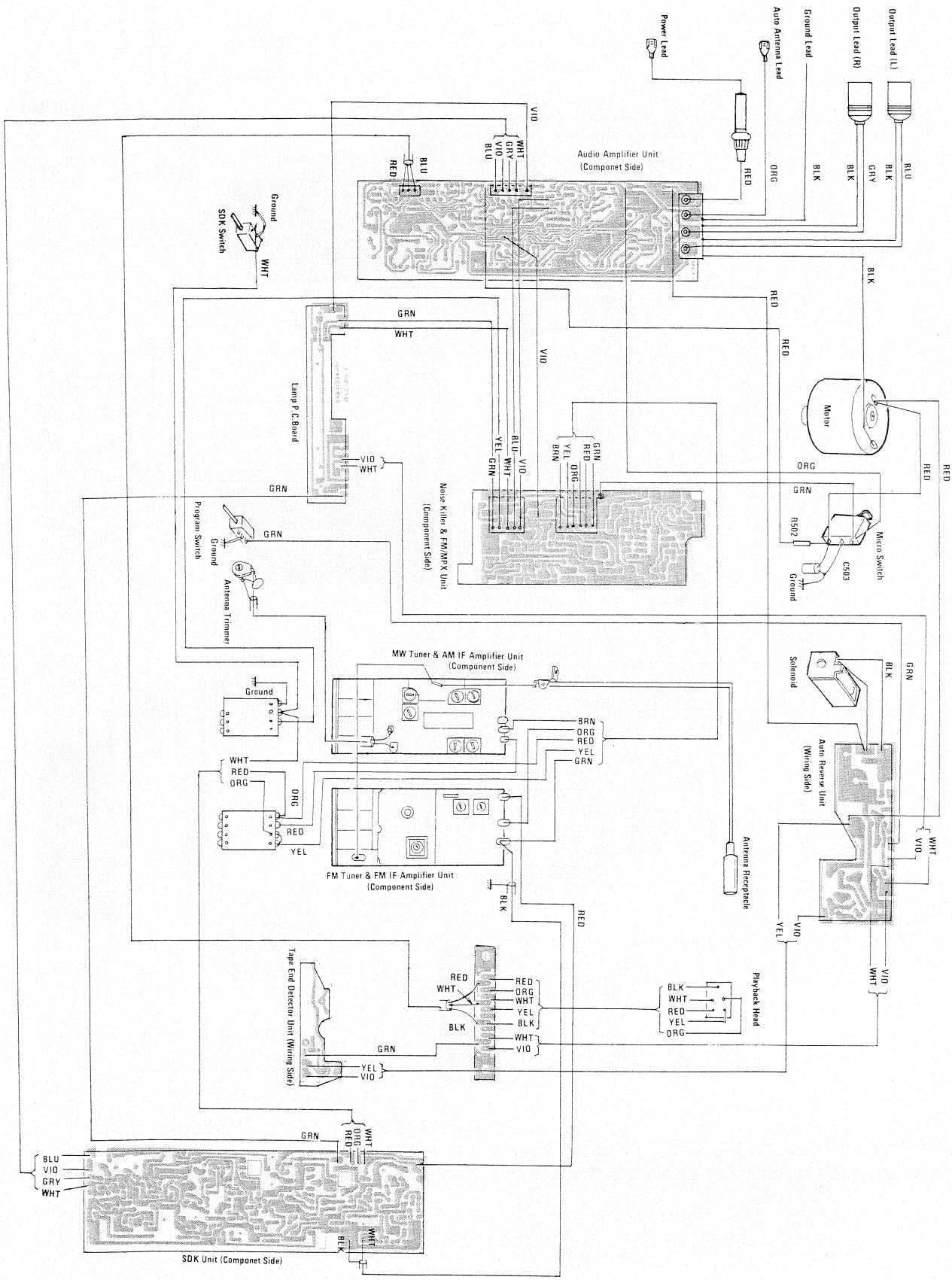
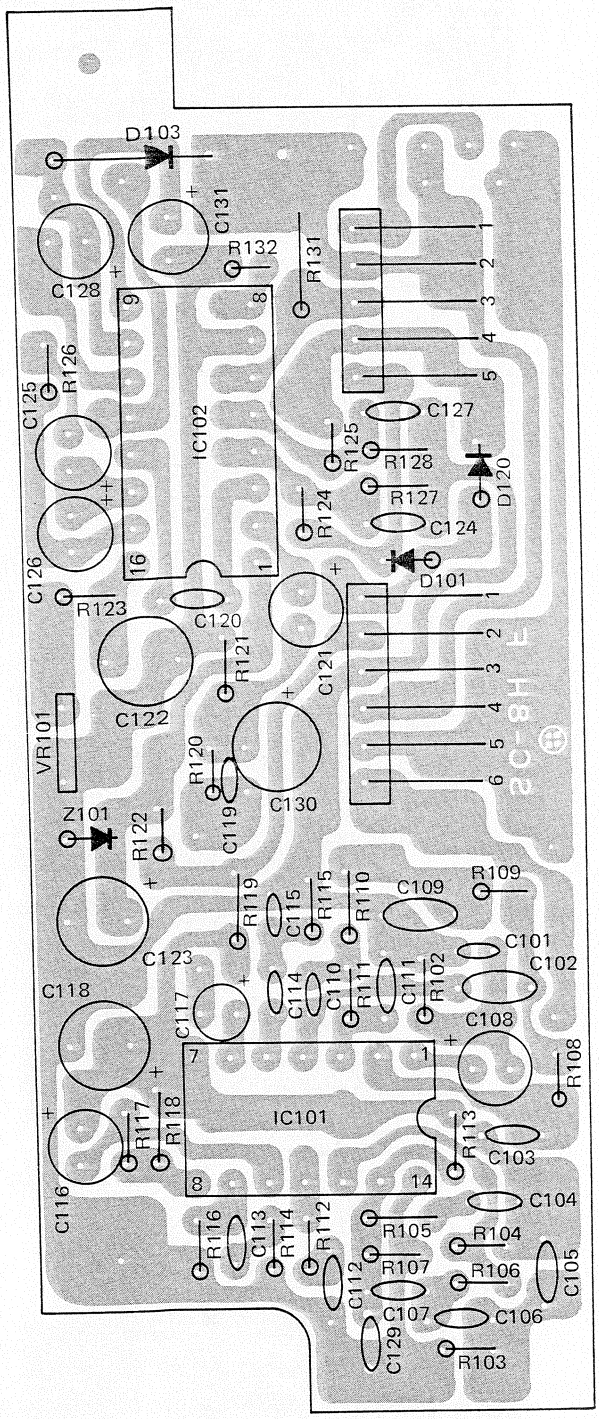

Power Lead
Auto Antenna Lead
Ground Lead
Output Lead (R)
Output Lead (L)
Audio Amplifier Unit
(Componet Side)
Ground
SDK Switch
Lamp P.C.Board
Noise Killer & FM/MPX Unit
(Component Side)
Motor
Micro Switch
R502
C503
Program Switch
Antenna Trimmer
MW Tuner & AM IF Amplifier Unit
(Component Side)
Solenoid
Auto Reverse Unit
(Wiring Side)
FM Tuner & FM IF Amplifier Unit
(Component Side)
Antenna Receptacle
Tape End Detector Unit (Wiring Side)
Playback Head
SDK Unit (Componet Side)

Figure 17

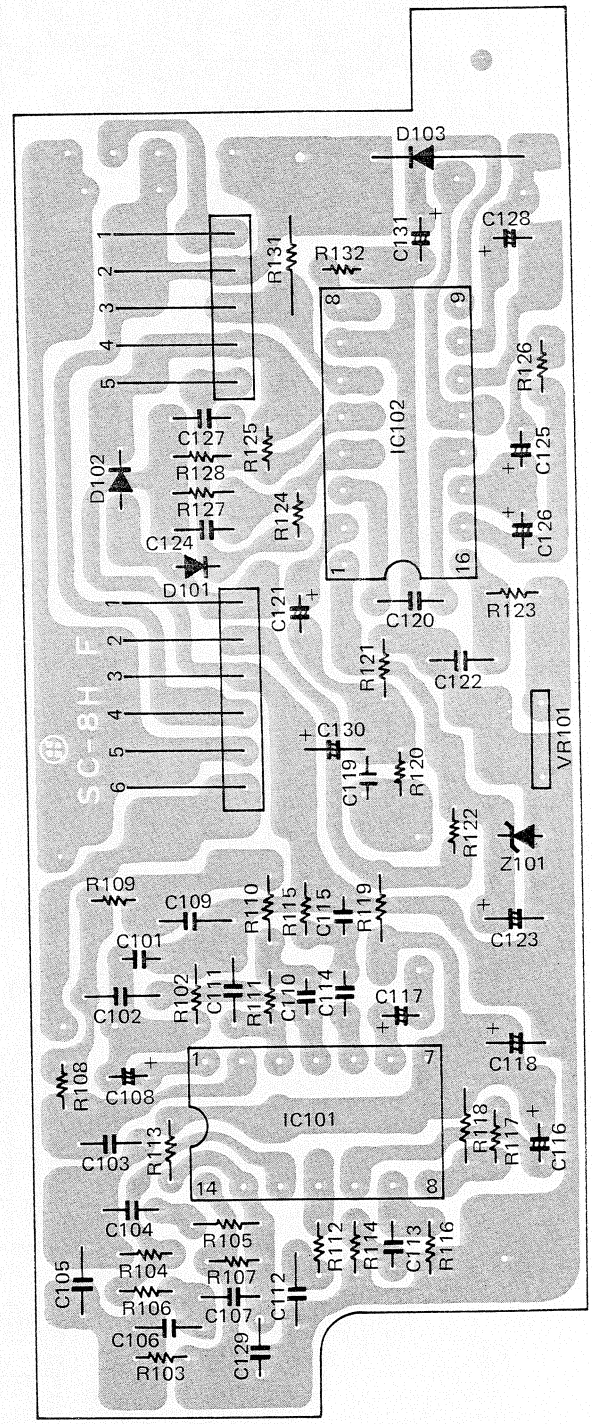
8. PRINTED CIRCUIT BOARDS

8-1 NOISE KILLER & MPX UNIT

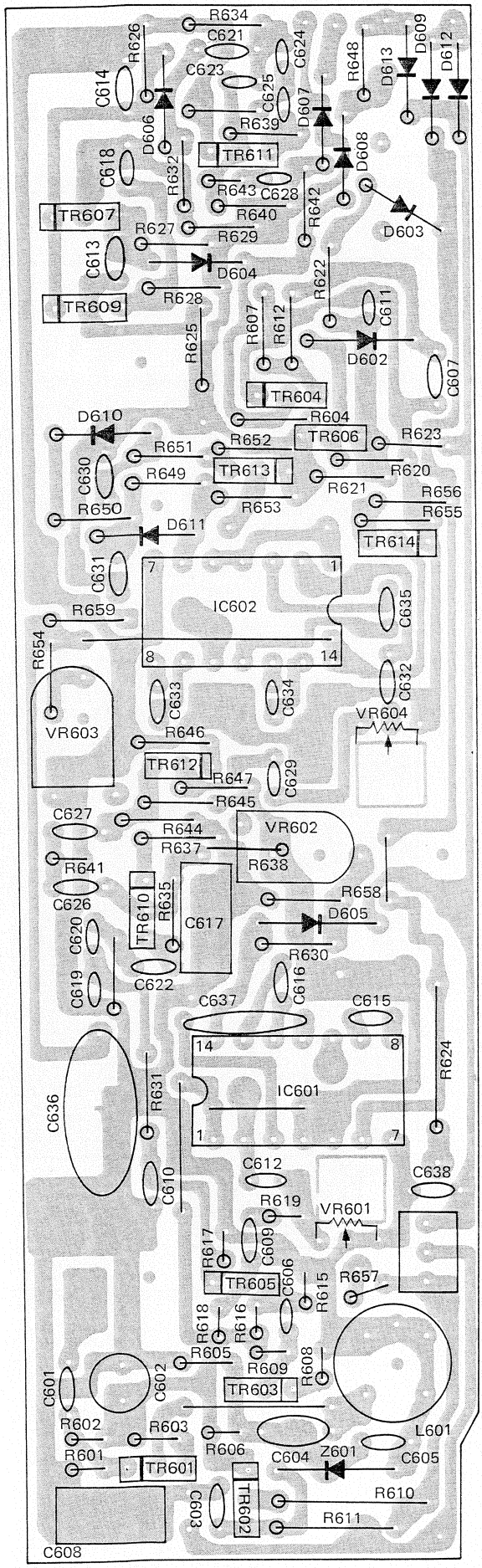
- Top View



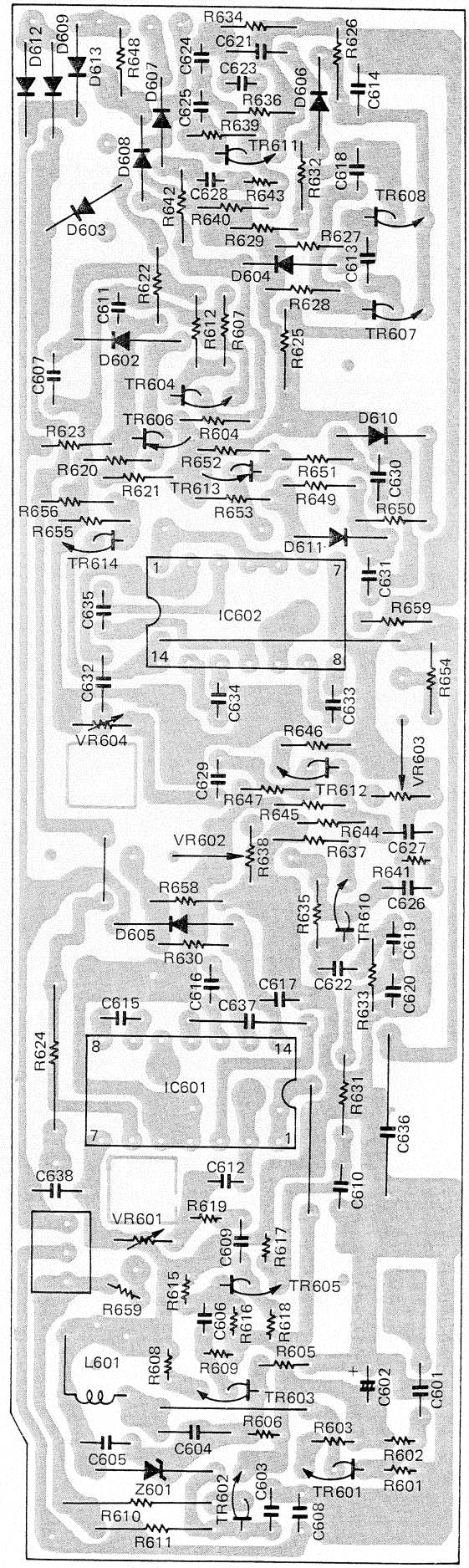
- Bottom View



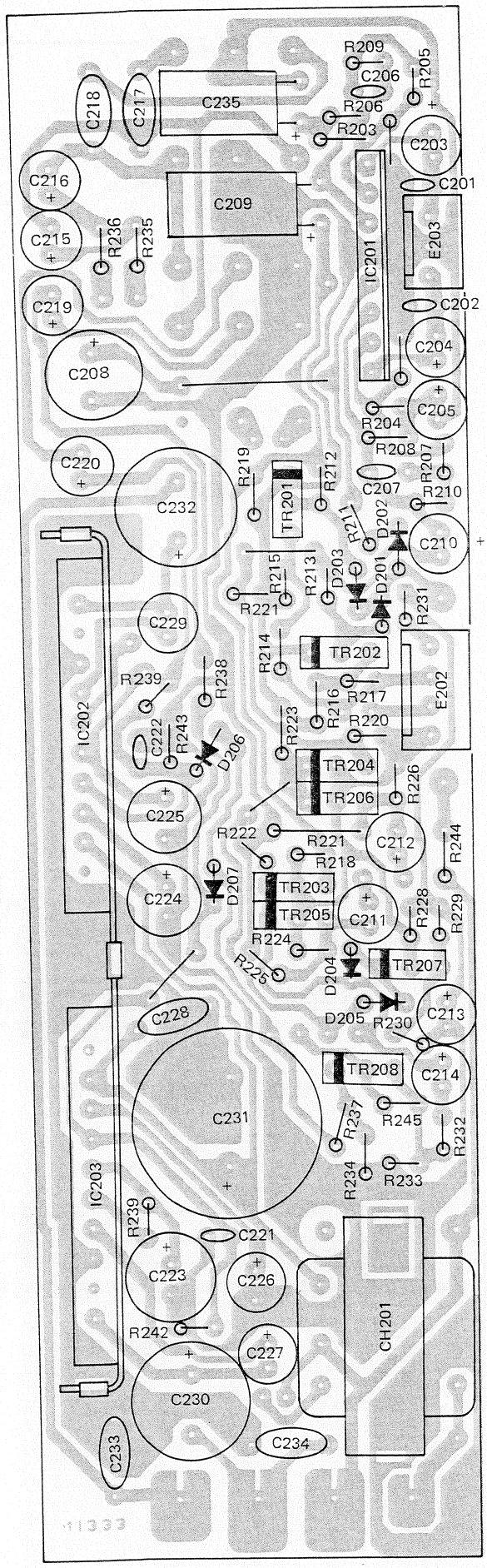
• Top View



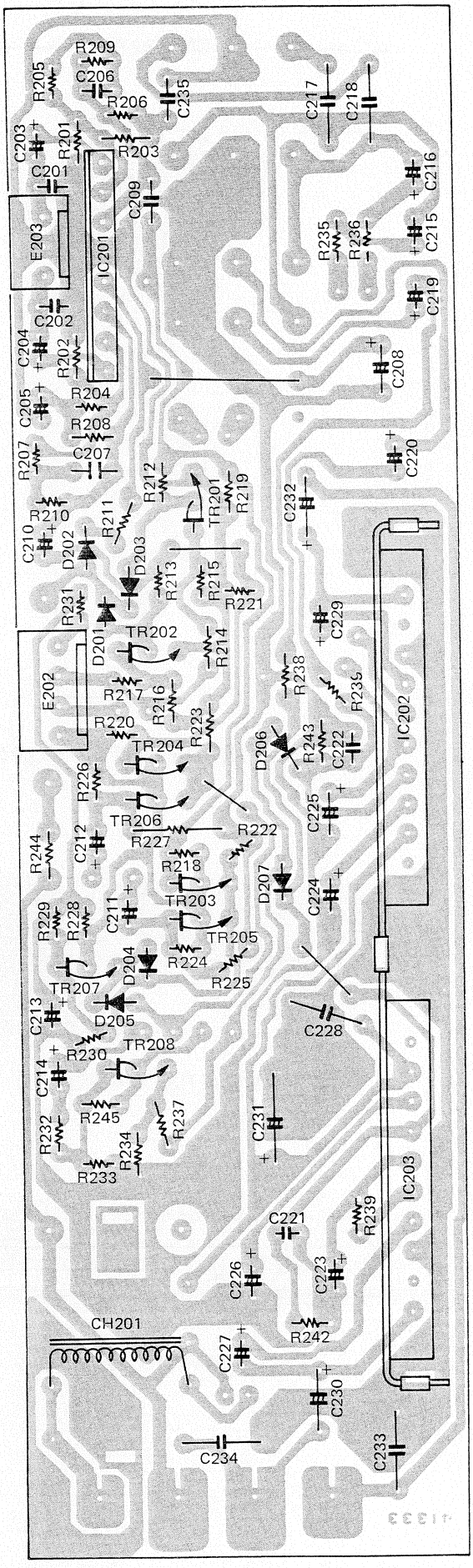
• Bottom View



- Top View

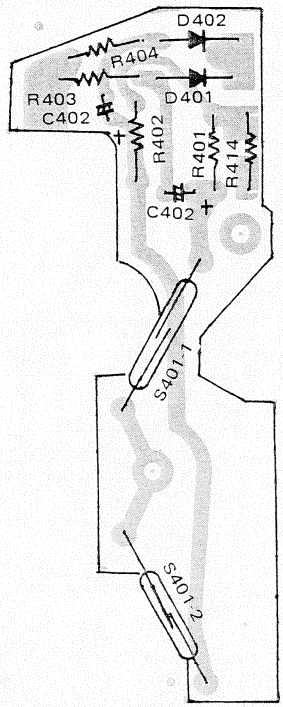


- Bottom View

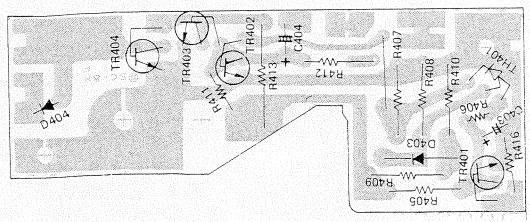


OTHER P.C.BOARDS

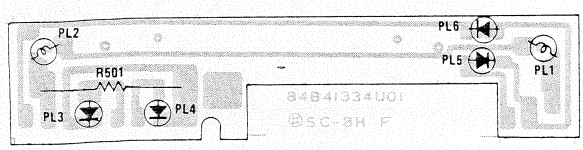
CM-832T



TAPE END DETECTOR P.C.BOARD

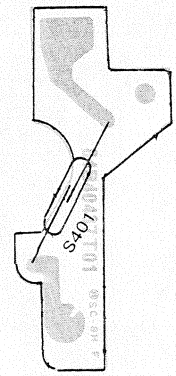


AUTO REVERSE P.C.BOARD

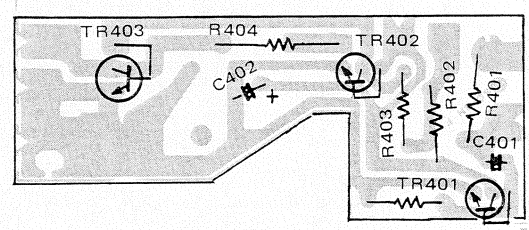


LAMP P.C.BOARD

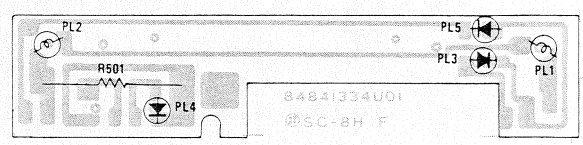
CM-822T



TAPE END DETECTOR P.C.BOARD

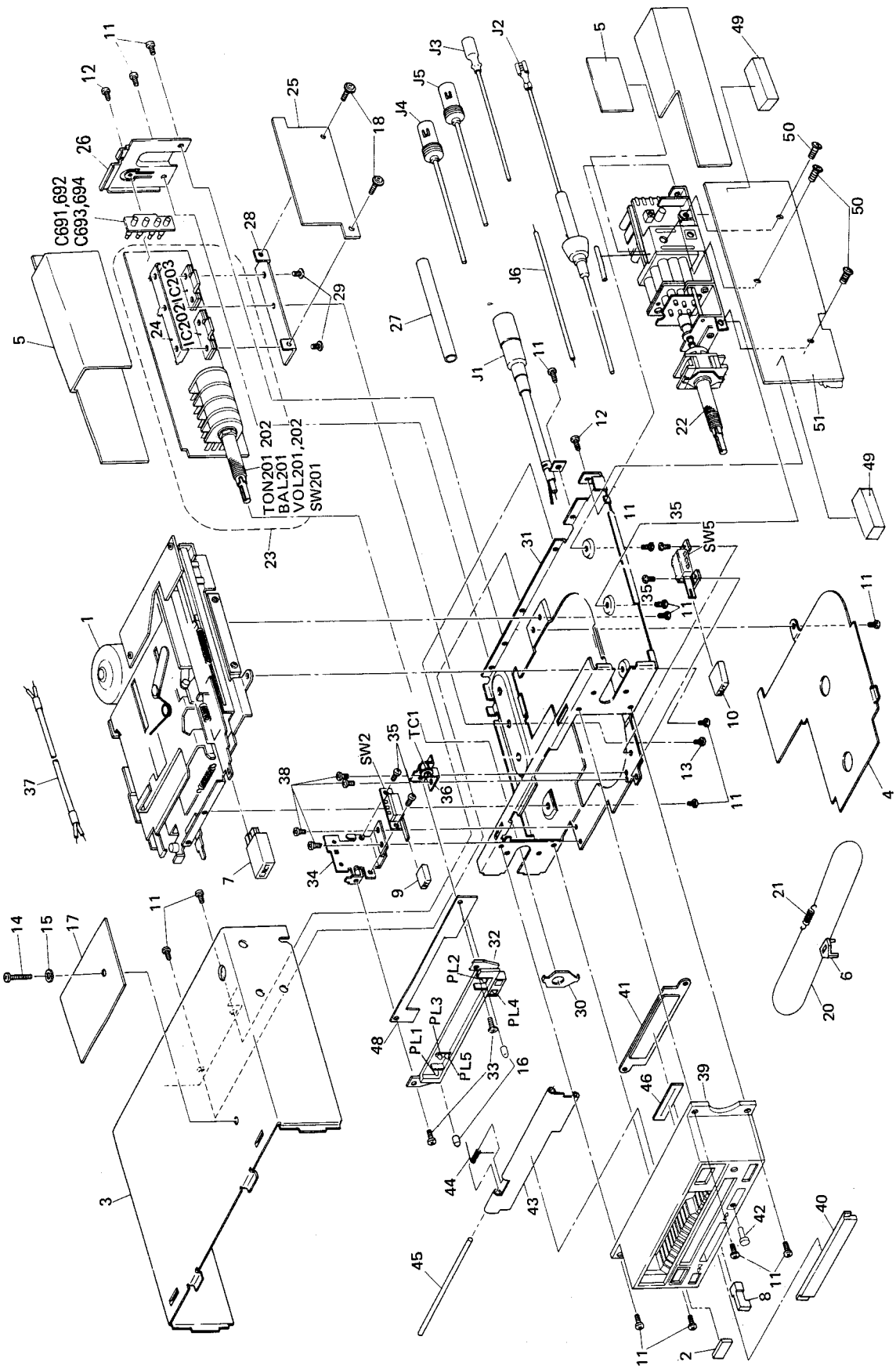


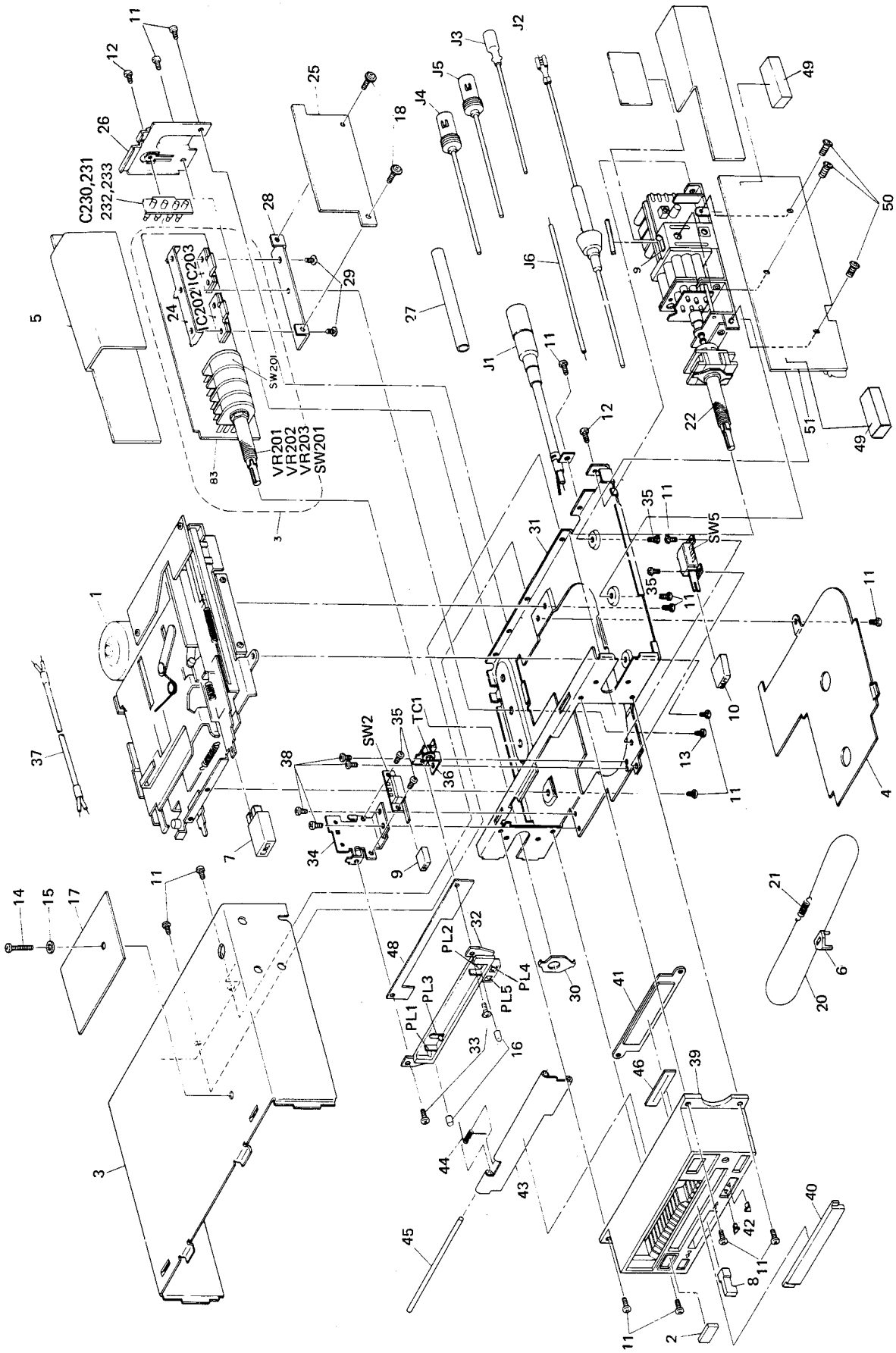
AUTO STOP P.C.BOARD



LAMP P.C.BOARD

9. EXPLODED VIEW, MAIN ASSEMBLY _____ CM-822T




C230,231
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C202
IC203
SW201
VR201
VR202
VR203
SW201
SW2
TC1
SW5
PL1
PL2
PL3
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PL5
J1
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J4
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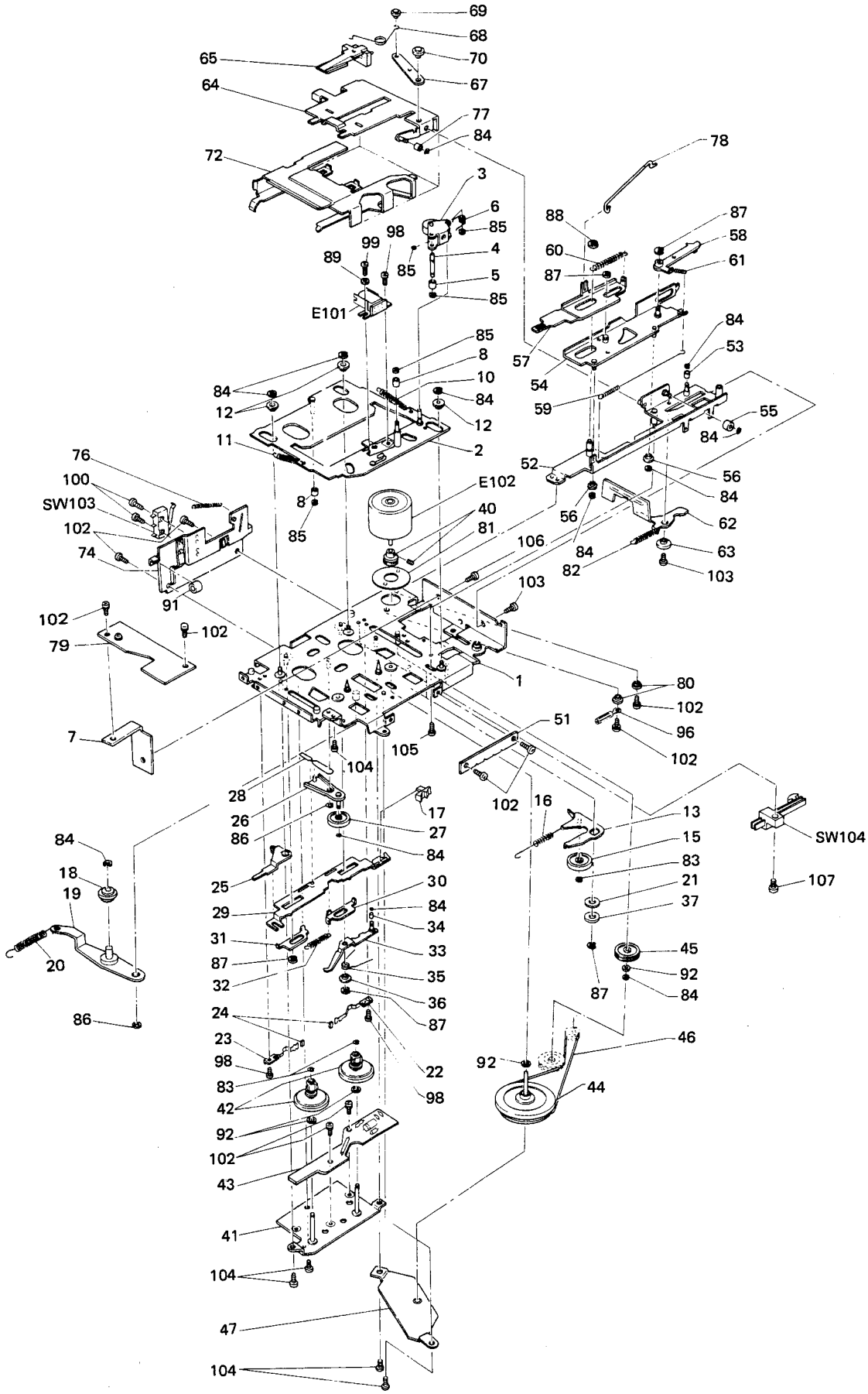
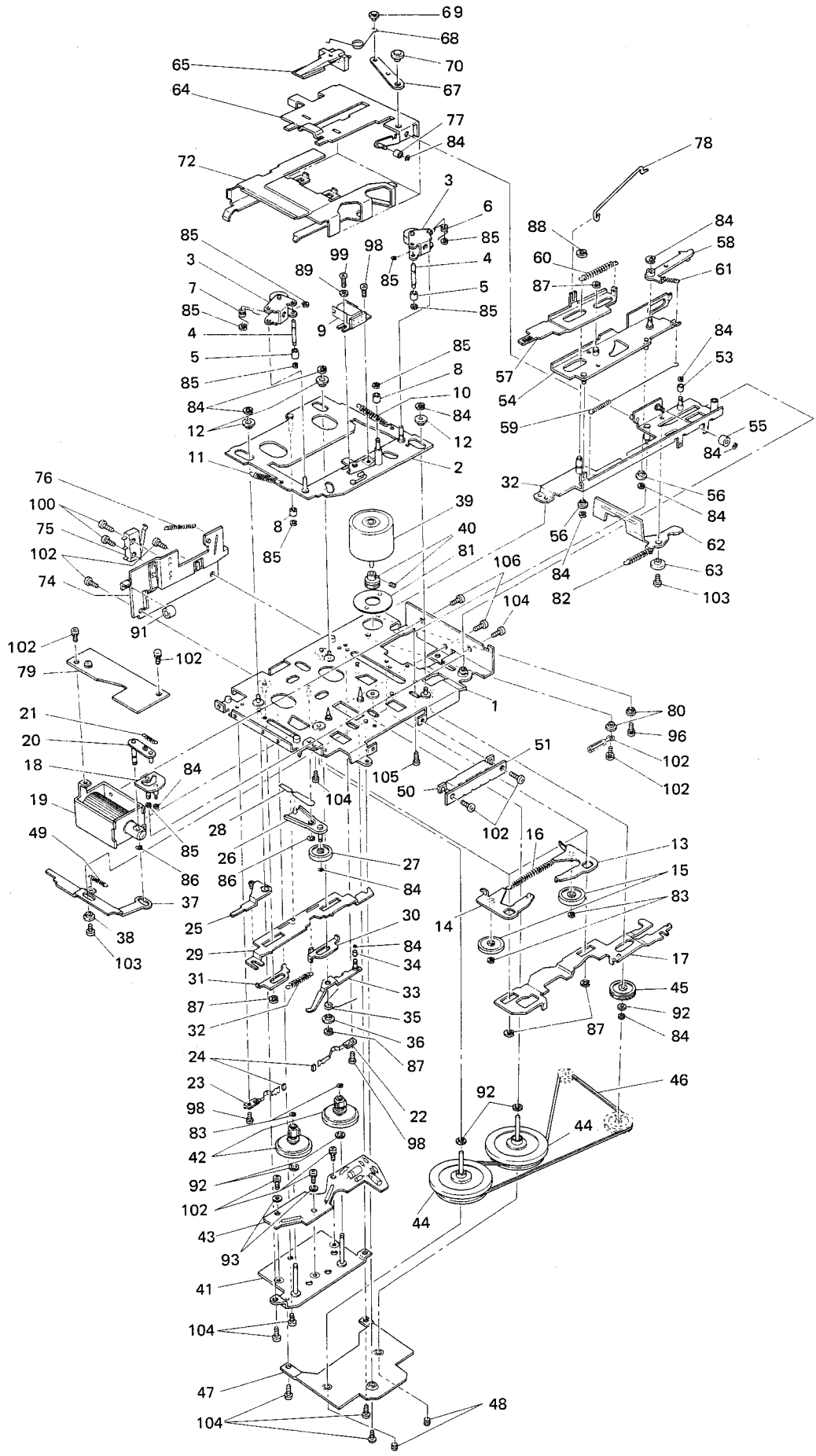
J6

10. EXPLODED VIEW, CASSETTE MECHANISM ___CM-822T

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11. PARTS LIST

AUDIO AMPLIFIER UNIT

Ref. No.	Part No.	Description		
SEMICONDUCTORS & MISCELLANEOUS				
IC201	51S42211P01	IC	M51521L	
IC202	51T44795P01	IC	HA1366W	
IC203	51T44795P02	IC	HA1366WR	
TR201	48T40627U01	TR	2SD636	
TR202	48T40627U01	TR	2SD636	
TR203	48T40627U01	TR	2SD636	
TR204	48T40627U01	TR	2SD636	
TR205	48T40267U01	TR	2SD636	
TR206	48T40627U01	TR	2SD636	
TR207	48T40627U01	TR	2SD636	
TR208	48T40627U01	TR	2SD636	
D201	48S134816	Diode	1S1555	
D202	48S134816	Diode	1S1555	
D203	48S134816	Diode	1S1555	
D204	48S134816	Diode	1S1555	
D205	48S134816	Diode	1S1555	
D206	48S134816	Diode	1S1555	
D207	48S134816	Diode	1S1555	
CH201	25C40894G01	Choke Filter		
	18T44876P01	Volume		
RESISTORS				
R201	6S41801P50	Carbon Film	33kΩ	1/4W
R202	6S41801P50	Carbon Film	33kΩ	1/4W
R203	6S41801P25	Carbon Film	270Ω	1/4W
R204	6S41801P25	Carbon Film	270Ω	1/4W
R205	6S41801P44	Carbon Film	10kΩ	1/4W
R206	6S41801P58	Carbon Film	150kΩ	1/4W
R207	6S41801P44	Carbon Film	10kΩ	1/4W
R208	6S41801P58	Carbon Film	150kΩ	1/4W
R209	6S41801P62	Carbon Film	330kΩ	1/4W
R210	6S41801P62	Carbon Film	330kΩ	1/4W
R212	6S41801P35	Carbon Film	1.8kΩ	1/4W
R213	6S41801P35	Carbon Film	1.8kΩ	1/4W
R214	6S41801P53	Carbon Film	56kΩ	1/4W
R215	6S41801P51	Carbon Film	39kΩ	1/4W
R216	6S41801P51	Carbon Film	39kΩ	1/4W
R217	6S41801P53	Carbon Film	56kΩ	1/4W
R218	6S41801P53	Carbon Film	56kΩ	1/4W
R219	6S41801P62	Carbon Film	330kΩ	1/4W
R220	6S41801P53	Carbon Film	56kΩ	1/4W
R221	6S41801P62	Carbon Film	330kΩ	1/4W
R222	6S41801P44	Carbon Film	10kΩ	1/4W
R223	6S41801P44	Carbon Film	10kΩ	1/4W
R224	6S41801P54	Carbon Film	68kΩ	1/4W
R225	6S41801P49	Carbon Film	27kΩ	1/4W
R226	6S41801P54	Carbon Film	68kΩ	1/4W
R227	6S41801P49	Carbon Film	27kΩ	1/4W
R228	6S41801P53	Carbon Film	56kΩ	1/4W
R229	6S41801P53	Carbon Film	56kΩ	1/4W
R230	6S41801P60	Carbon Film	220kΩ	1/4W
R231	6S41801P28	Carbon Film	470Ω	1/4W
R232	6S41801P45	Carbon Film	12kΩ	1/4W
R233	6S41801P50	Carbon Film	33kΩ	1/4W
R234	6S41801P44	Carbon Film	10kΩ	1/4W
R235	6S40801P38	Carbon Film	3.3kΩ	1/4W
R236	6S40801P38	Carbon Film	3.3kΩ	1/4W
R237	6S41801P49	Carbon Film	27kΩ	1/4W
R238	6S41801P36	Carbon Film	2.2kΩ	1/4W
R239	6S41801P36	Carbon Film	2.2kΩ	1/4W
R242	6S41801P44	Carbon Film	10kΩ	1/4W
R243	6S41801P44	Carbon Film	10kΩ	1/4W
R244	6B43205J14	Carbon Film	120Ω	1/2W
R245	6S41801P56	Carbon Film	100kΩ	1/4W
CAPACITORS				
C201	8T44979P01	Ceramic	1000pF	
C202	8T44979P01	Ceramic	1000pF	
C203	23D44333G01	Electrolytic	1μF	50V
C204	23D44333G01	Electrolytic	1μF	50V
C205	23B44780P09	Electrolytic	47μF	10V
C206	8T44979P08	Ceramic	0.01μF	
C207	8T44979P08	Ceramic	0.01μF	
C208	23B44780P08	Electrolytic	220μF	16V
C209	23T43648P01	Electrolytic	1μF	50V
C210	23T43648P01	Electrolytic	1μF	50V
C211	23C42909J01	Electrolytic	0.22μF	
C212	23C42909J01	Electrolytic	0.22μF	
C213	23B44780P09	Electrolytic	47μF	10V
C214	23D44333G01	Electrolytic	1μF	50V
C215	23D44333G06	Electrolytic	4.7μF	35V
C216	23D44333G06	Electrolytic	4.7μF	35V
C217	21B41870J06	Ceramic	0.05μF	
C218	21B41870J06	Ceramic	0.05μF	
C219	23D44333G01	Electrolytic	1μF	50V
C220	23D44333G01	Electrolytic	1μF	50V
C221	8T44979P01	Ceramic	1000pF	
C222	8T44979P01	Ceramic	1000pF	
C223	23B44780P10	Electrolytic	100μF	10V
C224	23B44780P10	Electrolytic	100μF	10V
C225	23B44780P10	Electrolytic	100μF	10V
C226	23B44780P10	Electrolytic	100μF	10V
C227	23B44780P09	Electrolytic	47μF	10V
C228	21B41870J02	Ceramic	0.1μF	
C229	23B44780P09	Ceramic	47μF	10V
C230	23B44780P05	Electrolytic	470μF	16V
C231	23B44780P06	Electrolytic	1000μF	16V
C232	23B44780P05	Electrolytic	470μF	16V
C233	21B41870J02	Ceramic	0.1μF	
C234	21B41870J02	Ceramic	0.1μF	
C235	23B44780P09	Electrolytic	47μF	10V

Ref. No.	Part No.	Description
SEMICONDUCTORS & MISCELLANEOUS		
IC601	51T44842P01	IC MPX TA7157P
IC602	51T44842P01	IC MPX TA7157P
TR601	48T40591U01	TR 2SB641
TR602	48T46627U01	TR 2SD636
TR603	48T40627U01	TR 2SD636
TR604	48T40627U01	TR 2SD636
TR605	48T40627U01	TR 2SD636
TR606	48T40591U01	TR 2SB641
TR607	48T40627U01	TR 2SD636
TR608	48T40627U01	TR 2SD636
TR610	48T40627U01	TR 2SD636
TR611	48T40627U01	TR 2SD636
TR612	48T40627U01	TR 2SD636
TR613	48T40591U01	TR 2SB641
TR614	48T40627U01	TR 2SD636
Z601	48S41873J02	Zener Diode
D602	48S134816	Diode 1S1555
D603	48S134816	Diode 1S1555
D604	48S134816	Diode 1S1555
D605	48S134816	Diode 1S1555
D606	48S134816	Diode 1S1555
D607	48S134816	Diode 1S1555
D608	48S134816	Diode 1S1555
D609	48S134816	Diode 1S1555
D610	48S134816	Diode 1S1555
D611	48S134816	Diode 1S1555
D612	48S134816	Diode 1S1555
D613	48S134816	Diode 1S1555
L601	24T41039U01	Inductor 10mH
VR601	18T42139U01	Variable Resistor 50kΩ
VR602	18C42061J15	Variable Resistor 50kΩ
VR603	18C42061J15	Variable Resistor 50kΩ
VR604	18T42139U01	Variable Resistor 50kΩ
RESISTORS		
R601	6S41041U30	Carbon Film 470kΩ 1/8W
R602	6S41041U30	Carbon Film 470kΩ 1/8W
R603	6S41040U75	Carbon Film 2.7kΩ 1/8W
R604	6S41042U89	Carbon Film 10kΩ 1/8W
R605	6S41041U06	Carbon Film 47kΩ 1/8W
R606	6S41041U26	Carbon Film 330kΩ 1/8W
R607	6S41043U38	Carbon Film 1M 1/8W
R608	6S41040U65	Carbon Film 1kΩ 1/8W
R609	6S41040U89	Carbon Film 10kΩ 1/8W
R610	6D40801G33	Carbon Film 56Ω 1/2W
R611	6S41802P28	Carbon Film 470Ω 1/4W
R612	6S41041U24	Carbon Film 270kΩ 1/8W
R615	6S41041U02	Carbon Film 33kΩ 1/8W
R616	6S41043U24	Carbon Film 270kΩ 1/8W
R617	6S41040U73	Carbon Film 2.2kΩ 1/8W
R618	6S41040U85	Carbon Film 6.8kΩ 1/8W
R619	6S41041U06	Carbon Film 47kΩ 1/8W
R620	6S41042U97	Carbon Film 22kΩ 1/8W
R621	6S41043U24	Carbon Film 270kΩ 1/8W
R622	6S41043U10	Carbon Film 68kΩ 1/8W

Ref. No.	Part No.	Description
R623	6S41043U16	Carbon Film 120kΩ 1/8W
R624	6D40801G67	Carbon Film 1.5kΩ 1/2W
R625	6S41042U81	Carbon Film 4.7kΩ 1/8W
R626	6S41042U71	Carbon Film 1.8kΩ 1/8W
R627	6S41043U12	Carbon Film 82kΩ 1/8W
R628	6S41043U12	Carbon Film 82kΩ 1/8W
R629	6S41042U81	Carbon Film 4.7kΩ 1/8W
R630	6S41042U93	Carbon Film 15kΩ 1/8W
R631	6S41042U93	Carbon Film 15kΩ 1/8W
R632	6S41042U95	Carbon Film 18kΩ 1/8W
R633	6S41042U89	Carbon Film 10kΩ 1/8W
R634	6S41042U97	Carbon Film 22kΩ 1/8W
R635	6S41043U26	Carbon Film 330kΩ 1/8W
R636	6S41042U97	Carbon Film 22kΩ 1/8W
R637	6S41042U57	Carbon Film 470Ω 1/8W
R638	6S41042U89	Carbon Film 10kΩ 1/8W
R639	6S41043U38	Carbon Film 1M 1/8W
R640	6S41042U89	Carbon Film 10kΩ 1/8W
R641	6S41040U89	Carbon Film 10kΩ 1/8W
R642	6S41043U22	Carbon Film 220kΩ 1/8W
R643	6S41041U12	Carbon Film 82kΩ 1/8W
R644	6S41043U06	Carbon Film 47kΩ 1/8W
R645	6S41043U26	Carbon Film 330kΩ 1/8W
R646	6S41042U57	Carbon Film 470Ω 1/8W
R647	6S41042U89	Carbon Film 10kΩ 1/8W
R648	6S41042U73	Carbon Film 2.2kΩ 1/8W
R649	6S41043U14	Carbon Film 100kΩ 1/8W
R650	6S41043U14	Carbon Film 100kΩ 1/8W
R651	6S41043U22	Carbon Film 220kΩ 1/8W
R652	6S41043U10	Carbon Film 68kΩ 1/8W
R653	6S41042U75	Carbon Film 2.7kΩ 1/8W
R654	6S41043U99	Carbon Film 27kΩ 1/8W
R655	6S41042U97	Carbon Film 22kΩ 1/8W
R656	6S41043U14	Carbon Film 100kΩ 1/8W
R657	6S41040U43	Carbon Film 120Ω 1/8W
R658	6S41042U91	Carbon Film 12kΩ 1/8W
R659	6S41043U06	Carbon Film 47kΩ 1/8W
CAPACITORS		
C601	8T44979P20	Ceramic 4700pF
C602	23D44333G36	Electrolytic 220μF 10V
C603	23S41059P26	Tantalum 10μF 16V
C604	8S41038U01	Mylar 1000pF
C605	8T44979P10	Ceramic 2200pF
C606	8T44979P22	Ceramic 10000pF
C607	23S41059P32	Tantalum 22μF 16V
C608	23B44780P01	Electrolytic 47μF 16V
C609	8T44979P22	Ceramic 10000pF
C610	23S41059P14	Tantalum 3.3μF 16V
C611	23S41059P07	Tantalum 1μF 25V
C612	23S41059P04	Tantalum 0.33μF 35V
C613	23S41059P26	Tantalum 10μF 16V
C614	23S41059P17	Tantalum 4.7μF 6.3V
C615	23S41059P17	Tantalum 4.7μF 6.3V
C616	23S41059P03	Tantalum 0.22μF 35V
C617	8C42195G13	Styrole 120pF
C618	23S41059P07	Tantalum 1μF 25V
C619	23S41059P01	Tantalum 0.1μF 35V

Ref. No.	Part No.	Description		
C620	23S41059P02	Tantalum	0.15μF	35V
C621	8T44979P10	Ceramic	22000pF	
C622	23S41059P01	Tantalum	0.1μF	35V
C623	8T44979P05	Ceramic	3300pF	
C624	8T44979P05	Ceramic	3300pF	
C625	8T44979P05	Ceramic	3300pF	
C626	23S41059P02	Tantalum	0.15μF	35V
C627	23S41059P07	Tantalum	1μF	25V
C628	21C40133G23	Ceramic	120pF	

Ref. No.	Part No.	Description		
C629	23S41059P07	Tantalum	1μF	25V
C630	23S41059P18	Tantalum	4.7μF	16V
C631	23S41059P18	Tantalum	4.7μF	16V
C632	23S41059P11	Tantalum	2.2μF	16V
C633	23S41059P17	Tantalum	4.7μF	6.3V
C634	23S41059P03	Tantalum	0.22μF	35V
C635	23S41059P03	Tantalum	0.22μF	35V
C637	8S44505P43	Ceramic	330pF	
C638	8T44979P22	Ceramic	10000pF	

NOISE KILLER & MPX UNIT — CM-822T/CM-832T

Ref. No.	Part No.	Description		
SEMICONDUCTORS & MISCELLANEOUS				
IC101	51T40064T01	IC	M51011P	
IC102	51T40170U01	IC	HA11227	
D101	48S134816	Diode	1S1555	
D102	48S134816	Diode	1S1555	
D103	48S134816	Diode	1S1555	
Z101	48S41873J01	Diode Zener	8.2V	
VR101	18B42472P04	Variable Resistor	10kΩ	
RESISTORS				
R102	6S41801P44	Carbon Film	10kΩ	1/4W
R103	6S41801P38	Carbon Film	3.3kΩ	1/4W
R104	6S41801P38	Carbon Film	3.3kΩ	1/4W
R105	6S41801P64	Carbon Film	470kΩ	1/4W
R106	6S41801P40	Carbon Film	4.7kΩ	1/4W
R107	6S41801P51	Carbon Film	3.9kΩ	1/4W
R108	6S41801P40	Carbon Film	4.7kΩ	1/4W
R109	6S41801P40	Carbon Film	4.7kΩ	1/4W
R110	6S41801P40	Carbon Film	4.7kΩ	1/4W
R111	6S41801P40	Carbon Film	4.7kΩ	1/4W
R112	6S41801P44	Carbon Film	10kΩ	1/4W
R113	6S41801P57	Carbon Film	120kΩ	1/4W
R114	6S41801P27	Carbon Film	390Ω	1/4W
R115	6S41801P45	Carbon Film	12kΩ	1/4W
R116	6S41801P42	Carbon Film	6.8kΩ	1/4W
R117	6S41801P44	Carbon Film	10kΩ	1/4W
R118	6S41801P32	Carbon Film	1kΩ	1/4W
R119	6S41801P16	Carbon Film	47Ω	1/4W
R120	6S41801P42	Carbon Film	6.8kΩ	1/4W
R121	6S41801P48	Carbon Film	22kΩ	1/4W
R122	6B43205J14	Carbon Film	120Ω	1/2W
R123	6S41801P48	Carbon Film	22kΩ	1/4W
R124	6S41801P38	Carbon Film	3.3kΩ	1/4W
R125	6S41801P38	Carbon Film	3.3kΩ	1/4W
R126	6S41801P32	Carbon Film	1kΩ	1/4W

Ref. No.	Part No.	Description		
R127	6S41801P38	Carbon Film	3.3kΩ	1/4W
R128	6S41801P38	Carbon Film	3.3kΩ	1/4W
R131	6B43205J15	Metal Film	470Ω	1/2W
R132	6S41801P18	Carbon Film	68Ω	1/4W
CAPACITORS				
C101	21C40133G10	Ceramic	330pF	
C102	21C40133G22	Ceramic	680pF	
C103	21C40133G10	Ceramic	330pF	
C104	21C41701J21	Ceramic	5pF	
C105,106	21C40133G10	Ceramic	330pF	
C107	21C40133G10	Ceramic	330pF	
C108	23D44333G05	Electrolytic	4.7μF	25V
C109	21C40133G22	Ceramic	680pF	
C110	8T44979P01	Ceramic	1200pF	
C111	21C40133G03	Ceramic	68pF	
C112	8T44979P09	Ceramic	0.015μF	
C113	8T44979P04	Ceramic	2200pF	
C114	8T44979P07	Ceramic	6800pF	
C115	21C41701J01	Ceramic	15pF	
C116	23C42909J02	Electrolytic	0.47μF	50V
C117	23D44333G08	Electrolytic	10μF	16V
C118	23B44780P02	Electrolytic	100μF	16V
C119	8T44979P01	Ceramic	1000pF	
C120	8T44979P12	Ceramic	0.047μF	
C121	23D44333G08	Electrolytic	10μF	16V
C122	8C42195G07	Fix Polystyrole	470pF	
C123	23D44333G30	Electrolytic	100μF	10V
C124	8T44979P09	Ceramic	0.015μF	
C125	23C42909J02	Electrolytic	0.47μF	50V
C126	23C42909J01	Electrolytic	0.22μF	50V
C127	8T44979P09	Ceramic	0.015μF	
C128	23D44333G02	Electrolytic	3.3μF	25V
C129	21C45322G12	Ceramic	15pF	
C130	23B44780P01	Electrolytic	47μF	16V
C131	23D44333G01	Electrolytic	1MF	50V

MISCELLANEOUS — CM-822T

Ref. No.	Part No.	Description
VC1	20C43248J01	Variable Capacitor 50pF
R501	6S40150T51	Carbon Film 270Ω 1/4W
R601	6S41801P32	Carbon Film 1kΩ 1/4W
C501	21C45322G16	Ceramic 33pF
C601	8T44979P10	Ceramic 0.022μF
C602	23D44333G37	Electrolytic 220μF 16V
C691	21B40802T01	Feed Through
C692	21B40802T01	Feed Through
C693	21B40802T01	Feed Through
C694	21B40802T01	Feed Through
J1	9C40957T08	Receptacle Antenna
J2	1D40889P05	Receptacle Fuse
J3	1B42679P04	Power Antenna

Ref. No.	Part No.	Description
J4	1C43962P04	Speaker Connector (R)
J5	1C43962P03	Speaker Connector (L)
J6	1B42187J11	Ground Lead
PL1	65B43447J01	Pilot Lamp
PL2	65B43447J01	Pilot Lamp
PL3	48B43298J02	LED (GREEN)
PL4	48S42667P03	LED (GREEN)
PL5	48B43298J01	LED (RED)
SW-1	40T40602T01	Tuning Shaft and Switch
SW-2	40B42262P01	Push Switch
SW-3	40C42625P01	Micro Switch
SW-4	40B40043U01	Leaf Switch
SW-5	40B42262P03	Push Switch

MISCELLANEOUS — CM-832T

Ref. No.	Part No.	Description
VC1	20C43248J01	Variable Capacitor 50pF
R501	6S40150T51	Carbon Film 270Ω 1/4W
R502	6S41801P32	Carbon Film 1kΩ 1/4W
C501	21C45322G16	Ceramic 33pF
C502	8T44979P10	Ceramic 0.022μF
C503	23D44333G37	Electrolytic 220μF 16V
C691	21B40802T01	Feed Through
C692	21B40802T01	Feed Through
C693	21B40802T01	Feed Through
C694	21B40802T01	Feed Through
J1	9C40957T08	Receptacle Antenna
J2	1D40889P05	Receptacle Fuse
J3	1B42679P04	Power Antenna
J4	1C43962P04	Speaker Connector (R)
J5	1C43962P03	Speaker Connector (L)

Ref. No.	Part No.	Description
J6	1B42187J11	Ground Lead
PL1	65B43447J01	Pilot Lamp
PL2	65B43447J01	Pilot Lamp
PL3	48S42667P03	LED (GREEN)
PL4	48S42667P03	LED (GREEN)
PL5	48B41334U01	LED (GREEN)
PL6	48B43298J01	LED (RED)
SW-1	40T44860P01	Tuning Shaft and Switch
SW-2	40B42262P01	Push Swtich
SW-3	40C42625P01	Micro Switch
SW-4	40T43743T01	Slide Switch
SW-5	40T43610P02	Push Switch
E1	88T43742P01	Playback Head
E2	59C41596P02	Motor
E3	1A40341T01	Solenoid

Ref. No.	Part No.	Description	Q'ty
1	81D44939P01	Cassette Deck CG75B120	1
2	33B42251P01	Name Cover	1
3	15C44853P01	Cover Top	1
4	27B43609P01	Chassis Cover	1
5	14A44955P01	Insulator Fiber	1
6	52A44956P01	Pointer Arm	1
7	36B44869P01	Knob, Eject	1
8	36B44870P01	Knob, FF & Rew	1
9	36B40038U01	Knob, SDK	1
10	36B44872P01	Knob, Program	1
11	3S44205G05	Scr., Tap. Tite (M3x5)	15
12	3S40011G58	Scr., Mch. (M2.6x0.45x3)	2
13	3C40014G24	Scr., Mch. (M3x0.5x10)	1
14	3S43997P05	Scr., Mch. (M2.6x0.45 x20) Phl Bind	1
15	43A43185G07	Spacer, Shaft	1
16	43A42996P01	Bushing Lamp	2
17	54B41321U02	Label, Model No.	1
18	3S40018G01	Scr., (M3x6)	2
20	30A43803G04 -500	Dial Cord	1
21	41A43445J02	Spring Dial	1
22	77D40821T01	Tuner Unit	1
23	1C41707U01	Assy., Pre-Main Amp.	1
24	7A44862P01	Brkt., IC MTG	1
25	1C40587T01	Assy., MPX & Noise Killer	1
26	7B44861P03	Brkt., AMP	1
27	37S44468G19 -80	Tube Vinyl	1
28	7A44863P01	Brkt., Heat Sink	1
29	3S40011G15	Scr., Mch. (M3x0.5 x10) Phl Rnd	2
30	4A43243P01	Washer, Dog	1
31	27D44852P01	Chassis Base	1
32	35B44856P02	Back, Scale Indicator	1
33	3S40011G69	Scr., Mch. M2x0.4, Phl. Bnd	2
34	7B44854P01	Bracket, Switch	1
35	3S40011G97	Scr., Mch. M2x0.4x2 Phl. Pan	4
36	7B44855P01	Bracket, Stud	1
37	30C44673J60	C.W. Shield	1
38	3S40011G73	Scr., Mch. M2x0.4x3 Phl. Flat	4
39	15D44868P01	Nose Piece	1
40	34B44858P02	Cover Scale	1
41	34B44859P03	Scale Dial	1
42	61A42633P02	Lens	2
43	15B40061U05	Cover Dust (Door)	1
44	41A43598P01	Spring, Cover Dust	1
45	47A43599P01	Shaft, Cover Dust	1
46	15A43596P01	Cover, Sheet	1
47	41A40650U01	Spring, Earth	1
48	84B41334U01	Panel, Lamp	1
49	75A42096P02	Cushion	2
50	3A42180U01	Screw., Polycabo (M3x5)	3
51	1C41329U01	Assy., SDK Panel	1
101	1V40600U36	Assy., Pamphlet	1
101-1	68P44360P42	Owners, Manual	1
101-2	56B40230G12	Sack, Polyethylene	1
102	1V40200T87	Assy., CM7AP720 Kit Installation	1
102-1	4S40072G11	Washer Tooth Lock (M5)	2
102-2	4S40070G08	Washer Flat (Blk. Zinc)	3
102-3	3S40012G39	Scr. Tpg. (M5x0.8x20)	1
102-4	4S40070G10	Washer Flat	4
102-5	2S40000G20	Nut Hex. (M9x0.75)	4
102-6	3A43315G03	Scr., Mch. (M5x0.8x20)	1
102-7	2S40000G13	Nut, Hex. (M5x0.8)	2
102-8	65A40348G01	Fuse (5A)	1
102-9	45K538873	Terminal Adaptor	2
102-10	56B40230G27	Sack Polyethylene	1
103	1B42338P03	Assy., Face Plate	1
104	54B42124G04	Label	1
105	42B40994G05	Strap Receiver Mtg	1
106	56B40230G22	Sack, Polyethylene	1
107	56C43246P11	Carton Packing (Ind.)	1
108	56D44156P01	Tray Packing	1
109	56D44156P02	Tray Packing	1
110	56D44156P03	Tray Packing	1
111	56A42069P02	Pad Packing	2
112	1B40222U01	Assy., Knob Control	1
112-1	36C40213T01	Knob, Control "A"	2
112-2	36B40214T01	Knob, Control "B"	2
112-3	56B40230G11	Sack, Polyethylene	1

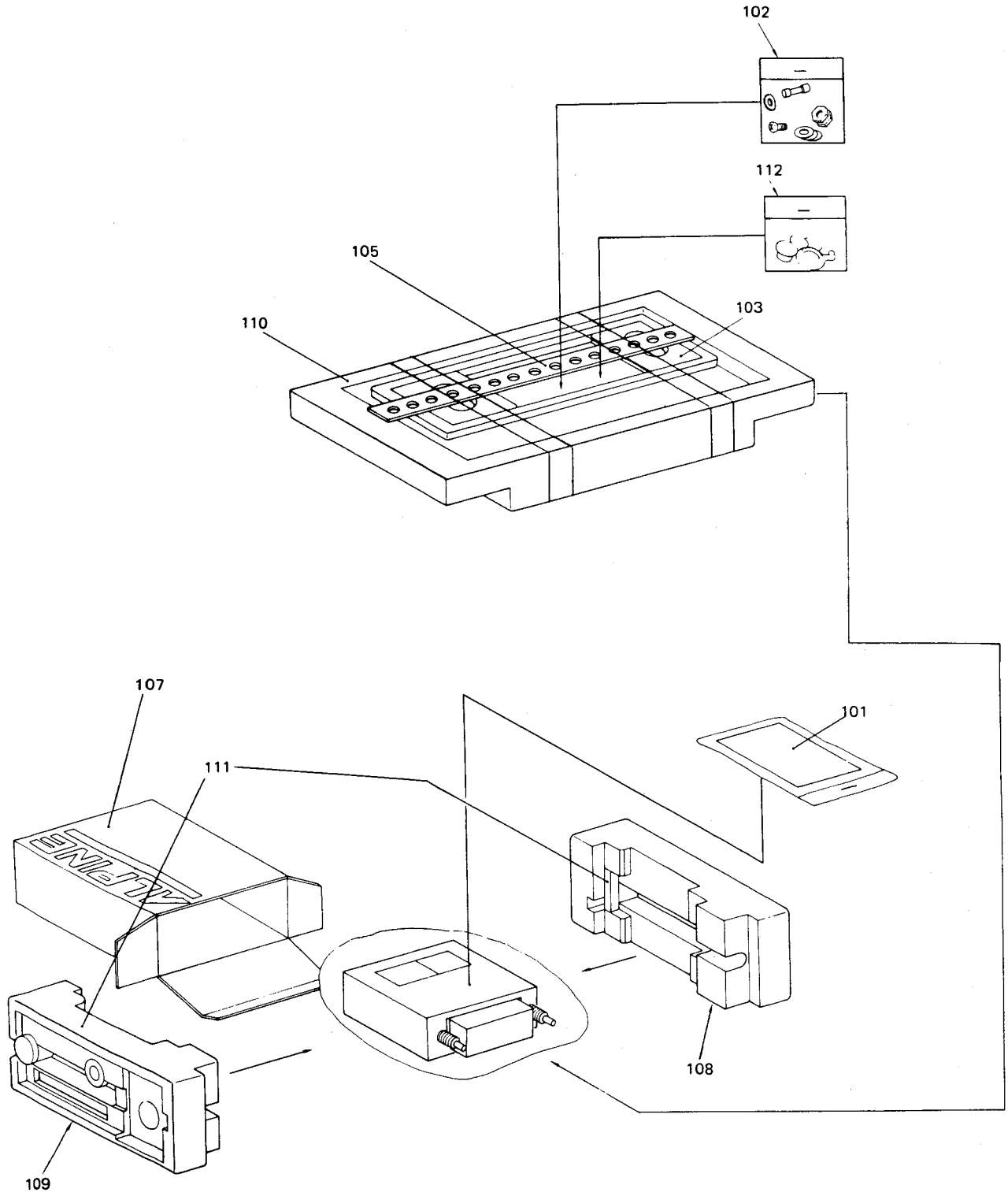
Ref. No.	Part No.	Description	Q'ty
1	81D40543T01	Cassette Deck GG75B110	1
2	33B42251P01	Name Cover	1
3	15C44853P01	Cover Top	1
4	27B43609P01	Chassis Cover	1
5	14A44955P01	Insulator Fiber	1
6	52A44956P01	Pointer Arm	1
7	36B44869P01	Knob, Eject	1
8	36B44870P01	Knob, FF & Rew	1
9	36B40038U01	Knob, SDK	1
10	36B40982T02	Knob, Stereo	1
11	3S44205G05	Scr., Tap. Tite (M3x0.5x5)	17
12	3S40011G58	Scr., Mch. (M2x0.45x3)	2
13	3C40014G24	Scr., Mch. (M3x0.5x10)	1
14	3S43997P05	Scr., Mch. (M2.6x0.45 x20) Phl. Bind.	1
15	43A43185G07	Spacer, Shaft	1
16	43A42996P01	Bushing Lamp	2
17	54B41321U02	Label, Model No.	1
18	3S40018G01	Scr., (M3x6)	2
19	NOT USED		
20	30S43803G04	Dial Cord	1
21	41A43445J02	Spring Dial	1
22	77D41302U01	Tuner Unit	1
23	1C41707U01	Assy., Pre-Main Amp Panel	1
24	7A44862P01	Brkt., IC MTG	1
25	1C40587T03	Assy., MPX & Noise Killer	1
26	7B44861P03	Brkt., AMP	1
27	37S40133J11 -40	Tube Vinyl	1
28	7A44863P01	Brkt., Heat Sink	1
29	3S40011G15	Scr., Mch. (M3x0.5 x10) Phl Rnd	2
30	4A43243P01	Washer, Dog	1
31	27D44852P02	Chassis Base	1
32	35B44856P02	Back, Scale Indicator	1
33	3S40011G69	Scr., Mch. M2x0.4, Phl. Bnd	2
34	7B44854P01	Bracket, Switch	1
35	3S40011G97	Scr., Mch. M2x0.4x2 Phl. Pan	4
36	7B44855P01	Bracket, Stud	1
37	30C44673J66	C.W. Shield	1
38	3S40011G73	Scr., Mch. M2x0.4x3 Phl. Flat	4
39	15D44868P02	Nose Piece	1
40	34B44858P02	Cover Scale	1
41	34B44859P03	Scale Dial	1
42	61A42788J03	Lens	1
43	15B40061U0	Cover Dust (Door)	1
44	41A43598P01	Spring, Cover Dust	1
45	47A43599P01	Shaft, Cover Dust	1
46	15A43596P01	Cover, Sheet	1
47	41A40650U01	Spring, Earth	1
48	84B41334U01	Panel, Lamp	1
49	75A42096P02	Cushion	2
50	3A42180U01	Screw., Polycabo (M3x5)	3
51	1C41329U01	Assy., SDK Panel	1
52	29C41045P03	Lug Wrap Around	1
53	29A737272	Lug Wrap Around	1
101	1V40800U29	Assy., Pamphlet	1
101-1	68P44360P51	Owners, Manual	1
101-2	56B40230G12	Sack, Polyethylene	1
102	1V40200T87	Assy., CM7AP720 Kit Installation	1
102-1	4S40072G11	Washer Tooth Lock (M5)	2
102-2	4S40070G08	Washer Flat (Blk. Zinc)	3
102-3	3S40012G39	Scr., Tpg. (M5x0.8x20)	1
102-4	4S40070G10	Washer Flat	4
102-5	2S40000G20	Nut Hex. (M9x0.75)	4
102-6	3A43315G03	Scr., Mch. (M5x0.8x20)	1
102-7	2S40000G13	Nut, Hex. (M5x0.8)	2
102-8	65A40348G01	Fuse (5A)	1
102-9	45K538873	Terminal Adaptor	2
102-10	56B40230G27	Sack Polyethylene	1
103	1B47338P06	Assy., Face Plate	1
104			
105	42B40994G05	Strap Receiver Mtg	1
106	56B40230G22	Sack, Polyethylene	1
107	56C43746P10	Carton Packing (Ind.)	1
108	56D44156P01	Tray Packing	1
109	56D44156P02	Tray Packing	1
110	56D44156P03	Tray Packing	1
111	56A42069P02	Pad Packing	2
112	1B40222U01	Assy., Knob Control	1

Ref. No.	Part No.	Description	Q'ty
1	1C40560T01	Assy., Riv. Chassis	1
2	1A40565T01	Assy., Riv. Sub Chassis	1
3	1V40300T89, T96	Assy., Pinchroller (R, L)	1
4	47A40365T01	Shaft, Bkt. Pinchroller	1
5	43A40579T01	Bushing	1
6	41A40376T01	Spring Pinchroller (R)	1
7	7A40057U01	Bkt., Panel Auto Stop	1
8	43A40420T02	Sleeve	2
9	88T40327T01	Head, Play Back	1
10	41B40348T03	Spring, Pull	1
11	41B40348T02	Spring, Pull	1
12	43A40422T01	Bushing	3
13	1A40335T01	Assy., Idler Lever (A)	1
14	40B40043U01	Sw. Leaf	1
15	49A40359T01	Idler Play	1
16	41A40044U01	Spring Pull	1
17	45A40039U01	Arm, Sw. Play	1
18	49A40040U01	Idler F.F./REW.	1
19	7A40041U01	Bkt., R/F	1
20	41A40042U01	Sp., Bkt. R/F	1
21	4S40070G18	Washer	1
22	41A40407T01	Spring Brake (A)	1
23	41A40408T01	Spring Brake (B)	1
24	43A40575T01	Rubber Brake	2
25	1A40562T01	Assy., Lever Button R/F	1
26	45A40398T01	Arm, Idler R/F	1
27	49A40360T01	Idler, R/F	1
28	41A40355T01	Spring, R/F Idler Arm	1
29	1A40563T02	Assy., Lever R/F	1
30	45A40338T01	Lever R/F (B)	1
31	45A40396T01	Lever R/F (A)	1
32	41A40356T01	Sp. R/F Lever	1
33	1A40564T01	Assy., Lever /RF Lock	1
34	43A40420T01	Sleeve	1
35	41A40354T01	Spring R/F Lock Lever	1
36	43A40422T02	Bushing	1
37	4S40070G30	Washer	1
39	59C42154P01	Motor	1
40	49A40436T01	Pulley Motor	1
41	1A40574T01	Assy., Riv. Bkt. Reel	1
42	1A40429T01	Assy., Reel Drive	2
43	1V40300T53	Assy., Lead Sw. Panel	1
44	49B40343T01	Flywheel	1
45	49A40351T01	Pulley Wheel	1
46	42B40367T01	Belt Drive	1
47	7A40045U01	Bkt. Flywheel	1
51	84A43569P01	Panel Sw.	1
52	1B40569T01	Assy., Riv. Bkt. Eject	1
53	43A40420T03	Sleeve	1

Ref. No.	Part No.	Description	Q'ty
54	1B40570T01	Assy., Lever Eject (A)	1
55	43A40423T02	Bushing	1
56	43A40426T01	Bushing, Eject Lever	2
57	45A40424T01	Lever Button Eject	1
58	1A40571T01	Assy., Lock Lever	1
59	41A40353T01	Spring Eject Lever (A)	1
60	41B40347T04	Sp., Pull	1
61	41B40347T05	Spring Pull	1
62	45A40397T01	Lever, Lock Release	1
63	43A40378T01	Bushing, Release Lever	1
64	45B40345T01	Arm, Cassette Chassis	1
65	45B40346T01	Guide, Cassette	1
67	45A40392T01	Lever Cassette Stop	1
68	41A40581T01	Spring, Cassette Chassis	1
69	46A40377T01	Stud Sp. Cassette Stop	1
70	46A40385T01	Stud, Lever Cassette Stop	1
72	27C40330T01	Chassis, Cassette	1
74	1A40573T01	Assy., Riv. Bkt. Cassette Chassis Guide	1
75	40C42625P01	Switch, Micro	1
76	41B40347T02	Spring Pull	1
77	43A40423T01	Bushing	1
78	45A40395T01	Link Connection	1
79	1V40300T64	Assy., Auto Stop Panel	1
80	43A44380J01	Spacer Motor	2
81	26A40362T01	Shield Plate	1
82	41B40347T01	Spring Pull	3
83	4C42091G12	Washer "C"	3
84	4C42091G06	Washer "C"	12
85	4C42091G05	Washer "C"	4
86	4C42091G11	Washer "C"	2
87	4C42091G04	Washer "C"	5
88	4C42091G03	Washer "C"	1
89	4S40070G33	Washer	1
91	75A40580T01	Rubber	1
92	4S40075G06	Washer (S.T.W)	4
96	29A737272	Lug	1
98	3S40011G33	Scr., Mch. M2x4	3
99	3S40011G57	Scr., Mch. (M2x5)	1
100	3S40011G87	Scr., Mch. (M2x8)	2
102	3C40014G12	Scr., Mch. (w/Cap) M2.6x5	10
103	3S40011G87	Scr., Mch. (w/Cap) M2.6x6	1
104	3S40011G68	Scr., Mch. (w/Cap) M2.6x5	5
105	3S40014G09	Scr., Mch. (w/Cap) M3x5	1
106	3S40011G88	Scr., Mch. (M3x5 Flat)	1
107	3S40011G31	Scr., (M2.6x4)	1

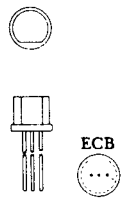
Ref. No.	Part No.	Description	Q'ty
1	1C40560T01	Assy., Riv. Chassis	1
2	1A40565T01	Assy., Riv. Sub Chassis	1
3	1V40300T89, T96	Assy., Pinchroller (R, L)	2
4	47A40365T01	Shaft, Bkt. Pinchroller	2
5	43A40579T01	Bushing	2
6	41A40376T01	Spring Pinchroller (R)	1
7	41A40368T01	Spring Pinchroller (L)	1
8	43A40420T02	Sleeve	2
9	88T43742P01	Head, Play Back	1
10	41B40348T03	Spring, Pull	1
11	41B40348T02	Spring, Pull	1
12	43A40422T01	Bushing	3
13	1A40335T01	Assy., Idler Lever (A)	1
14	1A40336T01	Assy., Idler Lever (B)	1
15	49A40359T01	Idler Play	2
16	41B40348T01	Spring Pull	1
17	45B40344T01	Lever Select	1
18	1A40566T01	Assy., Cam Select	1
19	1A40341T01	Assy., Plunger Solenoid	1
20	1A40567T01	Assy., Lever Cam Slide	1
21	41A40350T01	Spring Cam Lever	1
22	41A40407T01	Spring Brake (A)	1
23	41A40408T01	Spring Brake (B)	1
24	43A40575T01	Rubber Brake	2
25	1A40562T01	Assy., Lever Button R/F	1
26	45A40398T01	Arm, Idler R/F	1
27	49A40360T01	Idler, R/F	1
28	41A40355T01	Spring, R/F Idler Arm	1
29	1A40563T01	Assy., Lever R/F	1
30	45A40338T01	Lever R/F (B)	1
31	45A40396T01	Lever R/F (A)	1
32	41A40356T01	Sp. R/F Lever	1
33	1A40564T01	Assy., Lever R/F Lock	1
34	43A40420T01	Sleeve	1
35	41A40354T01	Spring R/F Lock Lever	1
36	43A40422T02	Bushing	1
37	45A40410T01	Lever, R/F	1
38	43A40582T01	Bushing	1
39	59C41596P02	Motor	1
40	49A40436T01	Pulley Motor	1
41	1A40574T01	Assy., Riv. Bkt. Reel	1
42	1A40429T01	Assy., Reel Drive	2
43	1V44200P02	Assy., Lead Sw. Panel	1
44	49B40343T01	Flywheel	2
45	49A40351T01	Pulley Wheel	1
46	42B40367T01	Belt Drive	1
47	7A40418T01	Bkt. Flywheel	1
48	43A40406T01	Bearing, Flywheel	2
49	41B40347T03	Spring Pull	1
50	40T43743T01	Sw. Slide	1
51	84A43569P01	Panel Sw.	1
52	1B40569T01	Assy., Riv. Bkt. Eject	1
53	43A40420T03	Sleeve	1
54	1B40570T01	Assy., Lever Eject (A)	1
55	43A40423T02	Bushing	1
56	43A40426T01	Bushing, Eject Lever	2
57	45A40424T01	Lever Button Eject	1
58	1A40571T01	Assy., Lock Lever	1
59	41A40353T01	Spring Eject Lever (A)	1
60	41B40347T04	Sp., Pull	1
61	41B40347T05	Spring Pull	1
62	45A40397T01	Lever, Lock Release	1
63	43A40378T01	Bushing, Release Lever	1
64	45B40345T01	Arm, Cassette Chassis	1
65	45B40346T01	Guide, Cassette	1
67	45A40392T01	Lever Cassette Stop	1
68	41A40581T01	Spring, Cassette Chassis	1
69	46A40377T01	Stud Sp. Cassette Stop	1
70	46A40385T01	Stud, Lever Cassette Stop	1
72	27C40330T01	Chassis, Cassette	1
74	1A40573T01	Assy., Riv. Bkt. Cassette Chassis Guide	1
75	40C42625P01	Switch, Micro	1
76	41B40347T02	Spring Pull	1
77	43A40423T01	Bushing	1
78	45A40395T01	Link Connection	1
79	1V40200T26	Assy., Reverse Panel	1
80	43A44380J01	Spacer Motor	2
81	26A40362T01	Shield Plate	1
82	41B40347T01	Spring Pull	1
83	4C42091G12	Washer "C"	4
84	4C42091G06	Washer "C"	12
85	4C42091G05	Washer "C"	9
86	4C42091G11	Washer "C"	2
87	4C42091G04	Washer "C"	6
88	4C42091G03	Washer "C"	1
89	4S40070G33	Washer	1
90	4S40075G05	Washer (S.T.W)	2
91	75A40580T01	Rubber	1
92	4S40075G06	Washer (S.T.W)	5
96	29A737272	Lug	1
98	3S40011G33	Scr., Mch. M2x4	3
99	3S40011G57	Scr., Mch. (M2x5)	1
100	3S40011G87	Scr., Mch. (M2x8)	2
102	3S40014G12	Scr., Mch. (w/Cap) M2.6x5	11
103	3S40011G84	Scr., Mch. (w/Cap) M2.6x6	2
104	3S40011G68	Scr., Mch. (w/Cap) M2.6x5	7
105	3S40014G09	Scr., Mch. (w/Cap) M3x5	1
106	3S40011G88	Scr., Mch. (M3x5 Flat)	2

12. PACKING METHOD



13. SEMICONDUCTOR LEAD IDENTIFICATIONS

Q401, Q402: 2SC733



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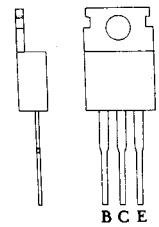
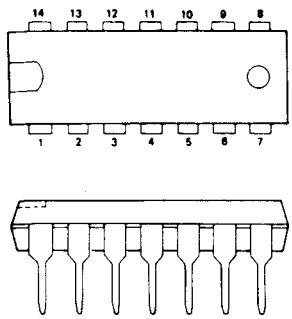


IC101: M51011P



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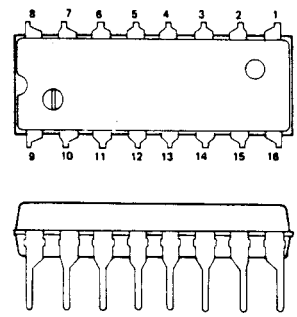

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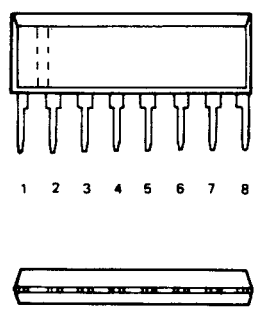

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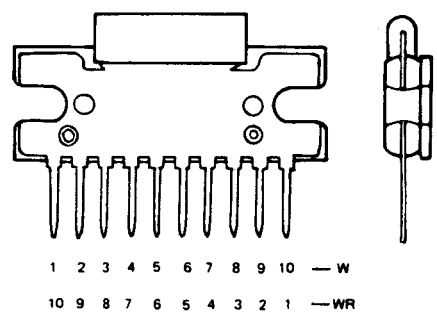

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